

# MS series service unit components

Key features

MS series service unit components		Solutions for every application		Freely combinable function modules	
<p>With its large product range, highly functional components and a wide choice of services, the MS series from Festo offers a complete concept for compressed air preparation. Suitable for simple standard applications as well as application-specific solutions to the highest quality standards.</p>		<p>Available as individual components, pre-assembled combinations ex-stock, application-specific combinations or complete turnkey solutions. The five sizes in the MS series achieve maximum flow rates with minimum space requirements.</p>		<p>Pressure regulators, on/off and soft-start valves with safety function, filter, pressure and flow sensors, dryers, sensors and lubricators. All these allow a suitable solution to be assembled for every task. Their modular structure means that the components</p>	
<p>are freely combinable. A simple connection system saves time when replacing individual modules without dismantling the entire combination. What's more, many of the components are certified to UL and ATEX.</p>		<p>CAD models and configurator</p> <p>Convenient aids for planning and selecting application-specific individual devices and combinations. The product configurator lets you configure customised solutions quickly and transfer the order data with no hassle.</p>		<p>Engineering tools</p> <p>Selection tool for choosing the right service unit without oversizing, and with the right air quality class:</p> <p>→ <a href="http://www.festo.com/engineering/wartungseinheit">www.festo.com/engineering/wartungseinheit</a></p>	

**Air quality**

This program supports configuring an appropriate service unit. Please insert the required air cleanliness either by your application or an ISO-code or by direct selection of air filters.

**Selection criteria: Application**

Filter combination is proposed based upon your selected application:

- standard pneumatics: operation of valves and cylinders, e.g. in automotive industry, secondary packaging
- mining and building industry: application without special air-cleaning requirements
- application of pressure operated tools and machines: pneumatic hammer, air engine, positioning with proportional valve
- electronic, flatpanel and solar industry, textile and paper production: application with residual oil content <0.5 mg/m<sup>3</sup>
- painting, powder coating, air bearing: application with residual oil content <0.003 mg/m<sup>3</sup> reduction of oil vapours and aerosols
- food and beverage industry, optics: application with residual oil content <0.003 mg/m<sup>3</sup> reduction of oil vapours and aerosols

**Selection criteria: ISO-class**

Filter combination is proposed based upon the air cleanliness class according to ISO 8573-1:2010

particle	water	oil
↓	4*	↓

**Direct filter selection**

Independent selection of filter combination:

- 40 µm Filter
- 5 µm Filter
- 1 µm Fine Filter
- 0.01 µm Micro Filter\*
- Active Carbon Filter

**ISO**

\* Downstream from the compressor the water content is assumed to be ISO class 4, better classes can be achieved by applying an adsorption dryer (PDA) or a membrane dryer (DM).

\* To enhance the filter lifetime and in consequence the maintenance interval arrange a 1 µm Fine Filter in front of the 0.01 µm Micro Filter as a preliminary filter.

Integrated sensors	Safety functions	Energy savings	Intelligent mix of sizes
Pressure and flow sensors	Soft-start/quick exhaust valves MS6-SV/MS9-SV	Service units MSE6	



- Maximum machine availability through controlled processes
- Reliable compressed air preparation and supply for systems
- Integrable or stand-alone
- Easy to connect with M8/M12 plug



- Fast and reliable exhausting of systems up to Performance Level e, certified to EN ISO 13849-1
- Integrated soft-start function



- Fully automatic monitoring and regulation of compressed air supply
- Automatic shut-off of the compressed air in stand-by mode
- Detection and notification of leakages
- Condition monitoring of relevant process data



- Optimum flow rate with up to 18% smaller size
- Excellent energy efficiency
- Cost-optimised combinations – save up to 30%!

Size differences						
Size		MS2	MS4	MS6	MS9	MS12
Grid dimension	[mm]	25	40	62	90	124
Port sizes		M5, QS-6	G1/8, G1/4, G3/8	G1/4, G3/8, G1/2, G3/4	G1/2, G3/4, G1, G1 1/4, G1 1/2	G1, G1 1/4, G1 1/2, G2
Standard nominal flow rate	[l/min]	350	1800	6500	20000	22000
qnN <sup>1)</sup>						

1) Using pressure regulator MS-LR as an example

# MS series service unit components

Key features



## Note Information

The next few pages provide a brief overview of the complete product range for the MS series service unit components.

You can find detailed information and all of the technical data in the documentation for the corresponding service unit component.

Accessories such as connection plates or mounting brackets can be ordered either via the configurator or separately.





## Structure of a service unit

The order of the individual components within a service unit is relevant for safety and functionality. It is not possible to assemble the service unit components in any order in the flow direction. There are restrictions and rules.

The configurator for service unit MSB is a reliable and convenient way of arranging individual service unit components. This ensures that the applicable rules are complied with. As a result, you get a completely assembled combination with UL or ATEX certification if you need it. When arranging a combination of individually configured and ordered service unit components, the points on the right must be adhered to under all circumstances.






- Regulators MS-LFR/LR/LRP/LRE are only permissible in the flow direction with the same or decreasing pressure regulation range
- Filters MS-LFR/LF/LFM/LFX are only permissible in the flow direction with an increasing grade of filtration
- Lubricators MS-LOE are not permitted in the flow direction upstream of a filter MS-LFR/LFM/LF/LFX, water separator MS-LWS or membrane air dryer MS-LDM1
- A micro filter MS-LFM must be installed upstream of an activated carbon filter MS-LFX or membrane air dryer MS-LDM1 in the flow direction
- A flow sensor SFAM cannot be installed directly downstream of a regulator MS-LFR/LR; a branching module MS-FRM must be positioned between them
- A soft-start/quick exhaust valve MS-SV must be the last service unit component in the flow direction

## Total product range for MS series service unit components

Type	Description	Size	Pneumatic connection					
			Push-in connector	Female thread			Connection plate with thread	
				M	G	NPT	G	NPT
<b>Combinations</b>								
<b>Service units MSB-FRC</b> <span style="float: right;">Technical data → Internet: msb</span>								
	Combinations of filter regulator and lubricator	4	-	-	1/8, 1/4	-	-	-
		6	-	-	1/4, 3/8, 1/2	-	-	-
<b>Service units MSB</b> <span style="float: right;">Technical data → Internet: msb</span>								
	7 combinations, predefined	4	-	-	1/4	-	-	-
		6	-	-	1/2	-	-	-
	Combinations freely configurable	4	-	-	1/8, 1/4	-	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	-	-	1/4, 3/8, 1/2	-	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	-	-	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
<b>Service units MSE6</b> <span style="float: right;">Technical data → Internet: mse6</span>								
	Combinations with fieldbus connection for measuring pressure, flow rate and consumption	6	-	-	-	-	1/2	-

# MS series service unit components







Key features

Total product range for MS series service unit components								
Type	Description	Size	Pneumatic connection					
			Push-in connector	Female thread			Connection plate with thread	
				M	G	NPT	G	NPT
<b>Individual devices</b>								
<b>Filter regulators MS-LFR</b>							Technical data → Internet: ms-lfr	
	Filter and pressure regulator in a single device, grade of filtration 5 or 40 µm	2	QS-6	M5	–	–	–	–
		4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–
<b>Filters MS-LF</b>								
							Technical data → Internet: ms-lf	
	Grade of filtration 5 or 40 µm	4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–
<b>Fine and micro filters MS-LFM</b>								
							Technical data → Internet: ms-lfm	
	Grade of filtration 0.01 or 1 µm	4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–
<b>Activated carbon filters MS-LFX</b>								
							Technical data → Internet: ms-lfx	
	For removing liquid and gaseous oil particles	4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–
<b>Water separators MS-LWS</b>								
							Technical data → Internet: ms-lws	
	Remove condensed water from compressed air, maintenance-free	6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–

# MS series service unit components

Key features








FESTO

Total product range for MS series service unit components								
Type	Description	Size	Pneumatic connection					
			Push-in connector	Female thread			Connection plate with thread	
				M	G	NPT	G	NPT
<b>Individual devices</b>								
<b>Pressure regulators MS-LR</b>							Technical data → Internet: ms-lr	
	For setting the required operating pressure, 4 pressure regulation ranges	2	QS-6	M5	–	–	–	–
		4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–
<b>Pressure regulators MS-LRB</b>							Technical data → Internet: ms-lrb	
	For creating a regulator manifold with independent pressure regulation ranges. Pressure output is to the front or rear.	4	–	–	1/4	–	1/8, 1/4, 3/8	–
		6	–	–	1/2	–	1/4, 3/8, 1/2, 3/4	–
<b>Precision pressure regulators MS-LRP</b>							Technical data → Internet: ms-lrp	
	For precise setting of the required operating pressure, 4 pressure regulation ranges, pressure hysteresis 0.02 bar	6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
<b>Precision pressure regulators MS-LRPB</b>							Technical data → Internet: ms-lrpb	
	For configuring a regulator manifold with independent pressure regulation ranges. Pressure output is to the front or rear.	6	–	–	1/2	–	1/4, 3/8, 1/2, 3/4	–
<b>Electrical pressure regulators MS-LRE</b>							Technical data → Internet: ms-lre	
	Electrically adjustable pressure regulator, 4 pressure regulation ranges	6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
<b>Lubricators MS-LOE</b>							Technical data → Internet: ms-loe	
	Add a precisely adjustable amount of oil to the compressed air. The oil mist component is proportional to the compressed air flow rate.	4	–	–	1/8, 1/4	–	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	–	–	1/4, 3/8, 1/2	–	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	–	–	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	–	–	–	–	1, 1 1/4, 1 1/2, 2	–

# MS series service unit components

Key features





FESTO

Total product range for MS series service unit components								
Type	Description	Size	Pneumatic connection					
			Push-in connector	Female thread			Connection plate with thread	
				M	G	NPT	G	NPT
<b>Individual devices</b>								
<b>On/off valves MS-EM</b> <span style="float: right;">Technical data → Internet: ms-em</span>								
	Manually operated on/off valve for pressurising and exhausting pneumatic installations.	4	-	-	1/8, 1/4	-	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	-	-	1/4, 3/8, 1/2	-	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	-	-	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	-	-	-	-	1, 1 1/4, 1 1/2, 2	-
<b>On/off valves MS-EE</b> <span style="float: right;">Technical data → Internet: ms-ee</span>								
	Solenoid actuated on/off valve for pressurising and exhausting pneumatic installations.	4	-	-	1/8, 1/4	-	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	-	-	1/4, 3/8, 1/2	-	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	-	-	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	-	-	-	-	1, 1 1/4, 1 1/2, 2	-
<b>Soft-start valves MS-DL</b> <span style="float: right;">Technical data → Internet: ms-dl</span>								
	Pneumatically actuated soft-start valve for slowly pressurising and exhausting pneumatic installations.	4	-	-	1/8, 1/4	-	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	-	-	1/4, 3/8, 1/2	-	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		12	-	-	-	-	1, 1 1/4, 1 1/2, 2	-
<b>Soft-start valves MS-DE</b> <span style="float: right;">Technical data → Internet: ms-de</span>								
	Solenoid actuated soft-start valve for slowly pressurising and exhausting pneumatic installations.	4	-	-	1/8, 1/4	-	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	-	-	1/4, 3/8, 1/2	-	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		12	-	-	-	-	1, 1 1/4, 1 1/2, 2	-
<b>Soft-start/quick exhaust valves MS-SV</b> <span style="float: right;">Technical data → Internet: ms-sv</span>								
	For building up pressure gradually and reducing pressure quickly and safely in pneumatic piping systems. Up to category 1, PL c.	6	-	-	1/2	-	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
		9	-	-	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
	Up to category 3, PL d. Up to category 4, PL e in the case of optional extension.	6	-	-	1/2	-	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
	Up to category 4, PL e.	6	-	-	1/2	-	1/4, 3/8, 1/2, 3/4	-

# MS series service unit components

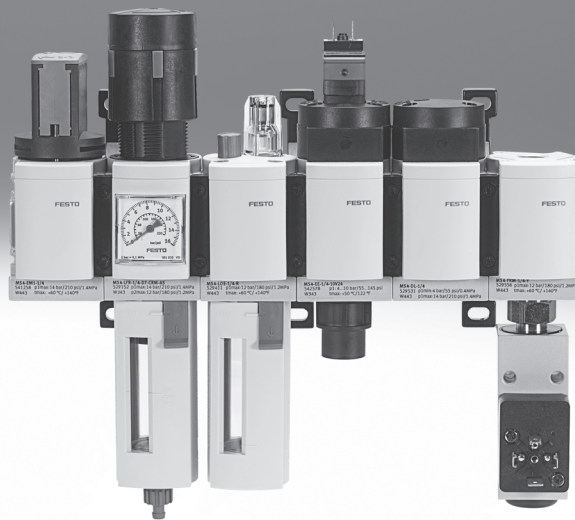
Key features

**FESTO**

Total product range for MS series service unit components								
Type	Description	Size	Pneumatic connection					
			Push-in connector	Female thread			Connection plate with thread	
				M	G	NPT	G	NPT
<b>Individual devices</b>								
<b>Membrane air dryers MS-LDM1</b>							Technical data → Internet: ms-ldm	
	Wear-free membrane dryer with internal air consumption	4	-	-	1/8, 1/4	-	1/8, 1/4, 3/8	1/8, 1/4, 3/8
		6	-	-	1/4, 3/8, 1/2	-	1/4, 3/8, 1/2, 3/4	1/4, 3/8, 1/2, 3/4
<b>Branching modules MS-FRM</b>								
							Technical data → Internet: ms-frm	
	Compressed air distributor with 4 connections	4	-	-	1/8, 1/4	-	1/8, 1/4, 3/8	-
		6	-	-	1/4, 3/8, 1/2	-	1/4, 3/8, 1/2, 3/4	-
		9	-	-	3/4, 1	3/4, 1	1/2, 3/4, 1, 1 1/4, 1 1/2	1/2, 3/4, 1, 1 1/4, 1 1/2
		12	-	-	-	-	1, 1 1/4, 1 1/2, 2	-
<b>Distributor blocks MS-FRM-FRZ</b>								
							Technical data → Internet: ms-frm-frz	
	Compressed air distributor with 4 connections and half the grid dimension width	4	-	-	-	-	-	-
		6	-	-	-	-	-	-
<b>Flow sensors SFAM</b>								
							Technical data → Internet: sfam	
	For absolute flow rate information and accumulated air consumption measurement	6	-	-	-	-	1/2	1/2
		9	-	-	-	-	1, 1 1/2	1, 1 1/2

## Service unit combinations MSB, MS series

**FESTO**



Festo core product range  
Covers 80% of your automation tasks

Worldwide:

Always in stock

Superb:

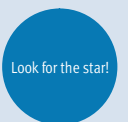
Festo quality at an attractive price

Easy:

Reduces procurement and storing complexity

★ Ready for dispatch from the Festo factory in 24 hours  
Held in stock in 13 service centres worldwide  
More than 2200 products

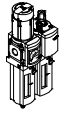
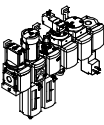



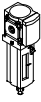

★ Ready for dispatch in 5 days maximum from stock  
Assembled for you in 4 service centres worldwide  
Up to  $6 \times 10^{12}$  variants per product series



# Service unit combinations MSB, MS series



Product range overview – MS series service units

Type	Size	Pneumatic connection in housing	Connecting plate	Pressure regulation range [bar]						Grade of filtration [µm]			
				0.05 ... 0.7	0.05 ... 2.5	0.1 ... 4	0.3 ... 7	0.1 ... 12	0.5 ... 16	0.01	1	5	40
Code			AG.../AQ...	D2	D4	D5	D6	D7	D8	A	B	C	E
<b>Service unit combinations</b>													
<b>MSB-FRC</b> 	4	G1/8, G1/4	G1/8, G1/4, G3/8	-	-	-	■	■	-	-	-	■	■
	6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	-	■	■	-	-	-	■	■
	9	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	-	-	-	-
<b>Service unit combinations (further variants can be ordered using the configurator → Internet: msb4, msb6 or msb9)</b>													
<b>MSB</b> 	4	G1/4	G1/8, G1/4, G3/8	-	-	-	■	■	-	-	-	■	■
	6	G1/2	G1/4, G3/8, G1/2, G3/4	-	-	-	■	■	-	-	-	■	■
	9	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	-	-	-	-
<b>Individual devices</b>													
<b>Filter regulators</b> <b>MS-LFR</b> 	4	G1/8, G1/4	G1/8, G1/4, G3/8	-	-	■	■	■	-	-	-	■	■
	6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	■	■	■	■	-	-	■	■
	9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	-	-	■	■	■	■	-	-	■	■
	12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	■	■	■	-	-	■	■
<b>Filters</b> <b>MS-LF</b> 	4	G1/8, G1/4	G1/8, G1/4, G3/8	-	-	-	-	-	-	-	-	■	■
	6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	-	-	-	-	-	-	■	■
	9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	-	-	-	-	-	-	-	-	■	■
	12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	-	-	■	■
<b>Fine and micro filters</b> <b>MS-LFM</b> 	4	G1/8, G1/4	G1/8, G1/4, G3/8	-	-	-	-	-	-	■	■	-	-
	6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	-	-	-	-	■	■	-	-
	9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	-	-	-	-	-	-	■	■	-	-
	12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	■	■	-	-
<b>Activated carbon filters</b> <b>MS-LFX</b> 	4	G1/8, G1/4	G1/8, G1/4, G3/8	-	-	-	-	-	-	-	-	-	-
	6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	-	-	-	-	-	-	-	-
	9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	-	-	-	-	-	-	-	-	-	-
	12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	-	-	-	-
<b>Water separators</b> <b>MS-LWS</b> 	4	-	-	-	-	-	-	-	-	-	-	-	-
	6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	-	-	-	-	-	-	-	-
	9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	-	-	-	-	-	-	-	-	-	-
	12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	-	-	-	-



# Service unit combinations MSB, MS series

Product range overview – MS series service units

Type	Size	Bowl guard		Condensate drains				Pressure indicator					Security		Options		→ Page/ Internet
		Plastic bowl with plastic bowl guard	Metal bowl	Manual rotary	Semi-automatic	Fully automatic	External, fully automatic, electrical	Cover plate (without pressure gauge)	Integrated MS pressure gauge	Adapter plate for EN pressure gauge G1/8	Adapter plate for EN pressure gauge G1/4	Pressure sensor	Rotary knob with detent, lockable via accessories	Rotary knob with integrated lock	Silencer	Flow direction from right to left	
Code		R	U	M	H	V	E...	VS	AG	A8	A4	AD...	AS	E11	S	Z	
<b>Service unit combinations</b>																	
MSB-FRC	4	■	-	■	-	■	-	-	■	-	-	-	■	-	-	■	msb4
	6	■	■	■	-	■	-	-	■	-	-	-	■	-	-	■	msb6
	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Service unit combinations</b>																	
MSB	4	■	■	■	-	■	-	-	■	-	-	-	■	-	-	■	8
	6	■	■	■	-	■	-	-	■	-	-	-	■	-	-	■	8
	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Individual devices</b>																	
Filter regulators MS-LFR	4	■	■	■	■	■	-	■	■	■	■	■	■	■	-	■	ms4-lfr
	6	■	■	■	■	■	■	■	■	■	■	■	■	■	-	■	ms6-lfr
	9	-	■	■	■	■	■	■	■	■	■	■	■	■	-	■	ms9-lfr
	12	-	■	■	-	■	■	■	■	■	■	■	■	■	-	■	ms12-lfr
Filters MS-LF	4	■	■	■	■	■	-	-	-	-	-	-	-	-	-	■	ms4-lf
	6	■	■	■	■	■	■	-	-	-	-	-	-	-	-	■	ms6-lf
	9	-	■	■	■	■	■	-	-	-	-	-	-	-	-	■	ms9-lf
	12	-	■	■	-	■	■	-	-	-	-	-	-	-	-	■	ms12-lf
Fine and micro filters MS-LFM	4	■	■	■	■	■	-	-	-	-	-	-	-	-	-	■	ms4-lfm
	6	■	■	■	■	■	■	-	-	-	-	-	-	-	-	■	ms6-lfm
	9	-	■	■	■	■	■	-	-	-	-	-	-	-	-	■	ms9-lfm
	12	-	■	■	-	■	■	-	-	-	-	-	-	-	-	■	ms12-lfm
Activated carbon filters MS-LFX	4	■	■	-	-	-	-	-	-	-	-	-	-	-	-	■	ms4-lfx
	6	■	■	-	-	-	-	-	-	-	-	-	-	-	-	■	ms6-lfx
	9	-	■	-	-	-	-	-	-	-	-	-	-	-	-	■	ms9-lfx
	12	-	■	-	-	-	-	-	-	-	-	-	-	-	-	■	ms12-lfx
Water separators MS-LWS	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	■	-	-	■	■	-	-	-	-	-	-	-	-	■	ms6-lws
	9	-	■	-	-	■	■	-	-	-	-	-	-	-	-	■	ms9-lws
	12	-	■	-	-	■	■	-	-	-	-	-	-	-	-	■	ms12-lws

# Service unit combinations MSB, MS series



Product range overview – MS series service units

Type	Size	Pneumatic connection in housing	Connecting plate	Pressure regulation range [bar]								Supply voltage			
				0.05	0.05	0.1	0.3	0.1	0.5	24 V DC, connection pattern to EN 175301	24 V DC, connection M12 to IEC 61076-2-101	110 V AC, connection pattern to EN 175301	230 V AC, connection pattern to EN 175301		
Code			AG.../AQ...	D2	D4	D5	D6	D7	D8	V24	V24P	V110	V230		
<b>Individual devices</b>															
Pressure regulators <b>MS-LR</b>		4	G1/8, G1/4	G1/8, G1/4, G3/8	-	-	■	■	■	-	-	-	-		
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	■	■	■	■	-	-	-		
		9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	-	-	■	■	■	■	-	-	-		
		12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	■	■	■	-	-	-		
Pressure regulators <b>MS-LRB</b>		4	G1/4	G1/8, G1/4, G3/8	-	-	■	■	■	-	-	-	-		
		6	G1/2	G1/4, G3/8, G1/2, G3/4	-	-	■	■	■	■	-	-	-		
		9	-	-	-	-	-	-	-	-	-	-	-		
		12	-	-	-	-	-	-	-	-	-	-	-		
Precision pressure regulators <b>MS-LRP</b>		4	-	-	-	-	-	-	-	-	-	-	-		
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	■	■	■	-	■	-	-	-	-		
		9	-	-	-	-	-	-	-	-	-	-	-		
		12	-	-	-	-	-	-	-	-	-	-	-		
Precision pressure regulators <b>MS-LRPB</b>		4	-	-	-	-	-	-	-	-	-	-	-		
		6	G1/2	G1/4, G3/8, G1/2, G3/4	■	■	■	-	■	-	-	-	-		
		9	-	-	-	-	-	-	-	-	-	-	-		
		12	-	-	-	-	-	-	-	-	-	-	-		
Electrical pressure regulators <b>MS-LRE</b>		4	-	-	-	-	-	-	-	-	-	-	-		
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	■	■	■	■	-	-	-		
		9	-	-	-	-	-	-	-	-	-	-	-		
		12	-	-	-	-	-	-	-	-	-	-	-		
Lubricators <b>MS-LOE</b>		4	G1/8, G1/4	G1/8, G1/4, G3/8	-	-	-	-	-	-	-	-	-		
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	-	-	-	-	-	-	-		
		9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	-	-	-	-	-	-	-	-	-		
		12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	-	-	-		
On-off valves, manually actuated <b>MS-EM(1)</b>		4	G1/8, G1/4	G1/8, G1/4, G3/8	-	-	-	-	-	-	-	-	-		
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	-	-	-	-	-	-	-		
		9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	-	-	-	-	-	-	-	-	-		
		12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	-	-	-		
On-off valves, electrically actuated <b>MS-EE</b>		4	G1/8, G1/4	G1/8, G1/4, G3/8	-	-	-	-	-	■	-	■	■		
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	-	-	-	■	-	■	■		
		9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	-	-	-	-	-	■	■	■	■		
		12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	■	■	■	■		
Soft-start valves, pneumatically actuated <b>MS-DL</b>		4	G1/8, G1/4	G1/8, G1/4, G3/8	-	-	-	-	-	-	-	-	-		
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	-	-	-	-	-	-	-		
		9	-	-	-	-	-	-	-	-	-	-	-		
		12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	-	-	-		
Soft-start valves, electrically actuated <b>MS-DE</b>		4	G1/8, G1/4	G1/8, G1/4, G3/8	-	-	-	-	-	■	-	■	■		
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	-	-	-	-	-	■	-	■	■		
		9	-	-	-	-	-	-	-	-	-	-	-		
		12	-	G1, G1 1/4, G1 1/2, G2	-	-	-	-	-	-	■	■	■		

# Service unit combinations MSB, MS series

Product range overview – MS series service units

Type	Size	Bowl guard		Pressure indicator				Security			Options		→ Page/ Internet
		Plastic bowl with plastic bowl guard	Metal bowl	Cover plate (without pressure gauge)	Integrated MS pressure gauge	Adapter plate for EN pressure gauge G1/8	Adapter plate for EN pressure gauge G1/4	Pressure sensor	Rotary knob with detent, lockable via accessories	Rotary knob with integrated lock	Silencer	Flow direction from right to left	
Code		R	U	VS	AG	A8	A4	AD...	AS	E11	S	Z	
<b>Individual devices</b>													
Pressure regulators <b>MS-LR</b>	4	-	-	■	■	■	■	■	■	■	-	■	ms4-lr
	6	-	-	■	■	-	■	■	■	■	-	■	ms6-lr
	9	-	-	■	■	-	■	■	■	■	-	■	ms9-lr
	12	-	-	■	■	-	■	-	■	■	-	■	ms12-lr
Pressure regulators <b>MS-LRB</b>	4	-	-	■	■	■	■	■	■	■	-	■	ms4-lrb
	6	-	-	■	■	-	■	■	■	■	-	■	ms6-lrb
	9	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	-	-	-	-
Precision pressure regulators <b>MS-LRP</b>	4	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	■	-	■	■	■	■	■	-	■	ms6-lrp
	9	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	-	-	-	-
Precision pressure regulators <b>MS-LRPB</b>	4	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	■	-	■	■	■	■	■	-	■	ms6-lrpb
	9	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	-	-	-	-
Electrical pressure regulators <b>MS-LRE</b>	4	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	■	■	-	■	-	-	-	-	■	ms6-lre
	9	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	-	-	-	-
Lubricators <b>MS-LOE</b>	4	■	■	-	-	-	-	-	-	-	-	■	ms4-loe
	6	■	■	-	-	-	-	-	-	-	-	■	ms6-loe
	9	-	■	-	-	-	-	-	-	-	-	■	ms9-loe
	12	-	■	-	-	-	-	-	-	-	-	■	ms12-loe
On-off valves, manually actuated <b>MS-EM(1)</b>	4	-	-	■	■	■	■	■	-	-	■	■	ms4-em1
	6	-	-	■	■	-	■	■	-	-	■	■	ms6-em1
	9	-	-	■	■	-	■	-	-	-	■	■	ms9-em
	12	-	-	■	■	-	■	-	-	-	■	■	ms12-em
On-off valves, electrically actuated <b>MS-EE</b>	4	-	-	■	■	■	■	■	-	-	■	■	ms4-ee
	6	-	-	■	■	-	■	■	-	-	■	■	ms6-ee
	9	-	-	■	■	-	■	■	-	-	■	■	ms9-ee
	12	-	-	■	■	-	■	-	-	-	■	■	ms12-ee
Soft-start valves, pneumatically actuated <b>MS-DL</b>	4	-	-	■	■	■	■	■	-	-	-	■	ms4-dl
	6	-	-	■	■	-	■	■	-	-	-	■	ms6-dl
	9	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	■	■	-	■	-	-	-	-	■	ms12-dl
Soft-start valves, electrically actuated <b>MS-DE</b>	4	-	-	■	■	■	■	■	-	-	-	■	ms4-de
	6	-	-	■	■	-	■	■	-	-	-	■	ms6-de
	9	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	■	■	-	■	-	-	-	-	■	ms12-de

# Service unit combinations MSB, MS series



Product range overview – MS series service units

Type	Size	Pneumatic connection in housing	Connecting plate	Performance Level			Supply voltage					
				Category 1, 1-channel	Category 3, 2-channel	Category 4, 2-channel with self-monitoring	24 V DC, Sub-D, 9-pin	24 V DC, connection pattern to EN 175301	24 V DC, connection M12 to IEC 61076-2-101	110/230 V AC, connection pattern to EN 175301	22 ... 31.6 V DC, connection M12, AS-i Safety at Work	
Code			AG.../AQ...	C	D	E	10V24	10V24/ V24	10V24P	V110/ V230	ASIS	
<b>Individual devices</b>												
Soft start and exhaust valves <b>MS-SV-C</b>		4	–									
		6	G1/2	G1/4, G3/8, G1/2, G3/4	■	–	–	–	■	■	–	–
		9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	■	–	–	–	■	■	■	–
		12	–									
Soft start and exhaust valves <b>MS-SV-D</b>		4	–									
		6	G1/2	G1/4, G3/8, G1/2, G3/4	–	■	–	–	■	■	–	–
		9	–									
		12	–									
Soft start and exhaust valves <b>MS-SV-E</b>		4	–									
		6	G1/2	G1/4, G3/8, G1/2, G3/4	–	–	■	■	–	–	–	■
		9	–									
		12	–									
Membrane air dryers <b>MS-LDM1</b>		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–	–	–	–
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	–	–	–
		9	–									
		12	–									
Branching modules <b>MS-FRM</b>		4	G1/8, G1/4	G1/8, G1/4, G3/8	–	–	–	–	–	–	–	–
		6	G1/4, G3/8, G1/2	G1/4, G3/8, G1/2, G3/4	–	–	–	–	–	–	–	–
		9	G3/4, G1	G1/2, G3/4, G1, G1 1/4, G1 1/2	–	–	–	–	–	–	–	–
		12	–	G1, G1 1/4, G1 1/2, G2	–	–	–	–	–	–	–	–
Distributor blocks <b>MS-FRM-FRZ</b>		4	G1/4	–	–	–	–	–	–	–	–	–
		6	G1/2	–	–	–	–	–	–	–	–	–
		9	–									
		12	–									
Flow sensors <b>SFAM</b>		4	–									
		6	G1/2	G1/2	–	–	–	–	–	–	–	–
		9	–	G1, G1 1/2	–	–	–	–	–	–	–	–
		12	–									

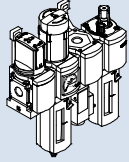
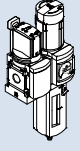
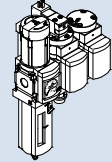
# Service unit combinations MSB, MS series

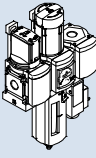
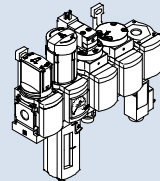
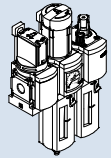
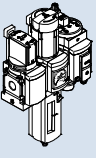
Product range overview – MS series service units

Type	Size	Bowl guard		Pressure indicator					Switch output		Options		→ Page/ Internet
		Plastic bowl with plastic bowl guard	Metal bowl	Cover plate (without pressure gauge)	Integrated MS pressure gauge	Adapter plate for EN pressure gauge G <sup>3</sup> / <sub>8</sub>	Adapter plate for EN pressure gauge G <sup>1</sup> / <sub>4</sub>	Pressure sensor	2x PNP or NPN, 1 analogue output 4 ... 20 mA	2x PNP or NPN, 1 analogue output 0 ... 10 V	Silencer	Flow direction from right to left	
Code		R	U	VS	AG	A8	A4	AD...	2SA	2SV	S	Z/R	
<b>Individual devices</b>													
Soft start and exhaust valves <b>MS-SV-C</b>	4	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	■	■	-	■	■	-	-	■	■	ms6-sv
	9	-	-	■	■	-	■	■	-	-	■	■	ms9-sv
	12	-	-	-	-	-	-	-	-	-	-	-	-
Soft start and exhaust valves <b>MS-SV-D</b>	4	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	■	■	-	■	■	-	-	■	■	ms6-sv
	9	-	-	-	-	-	-	-	-	-	-	-	-
Soft start and exhaust valves <b>MS-SV-E</b>	4	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	■	■	-	■	■	-	-	■	■	ms6-sv
	9	-	-	-	-	-	-	-	-	-	-	-	-
Membrane air dryers <b>MS-LDM1</b>	4	-	■	-	-	-	-	-	-	-	-	■	ms4-ldm1
	6	-	■	-	-	-	-	-	-	-	-	■	ms6-ldm1
	9	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	-	-	-	-
Branching modules <b>MS-FRM</b>	4	-	-	■	■	■	■	■	-	-	-	■	ms4-frm
	6	-	-	■	■	-	■	■	-	-	-	■	ms6-frm
	9	-	-	■	■	-	■	■	-	-	-	■	ms9-frm
	12	-	-	■	-	-	-	-	-	-	-	-	ms12-frm
Distributor blocks <b>MS-FRM-FRZ</b>	4	-	-	-	-	-	-	-	-	-	-	■	ms4-frm
	6	-	-	-	-	-	-	-	-	-	-	■	ms6-frm
	9	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	-	-	-	-
Flow sensors <b>SFAM</b>	4	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	-	-	-	-	-	■	■	-	■	sfam-62
	9	-	-	-	-	-	-	-	■	■	-	■	sfam-90
	12	-	-	-	-	-	-	-	-	-	-	-	-

# Service unit combinations MSB4/MSB6, MS series

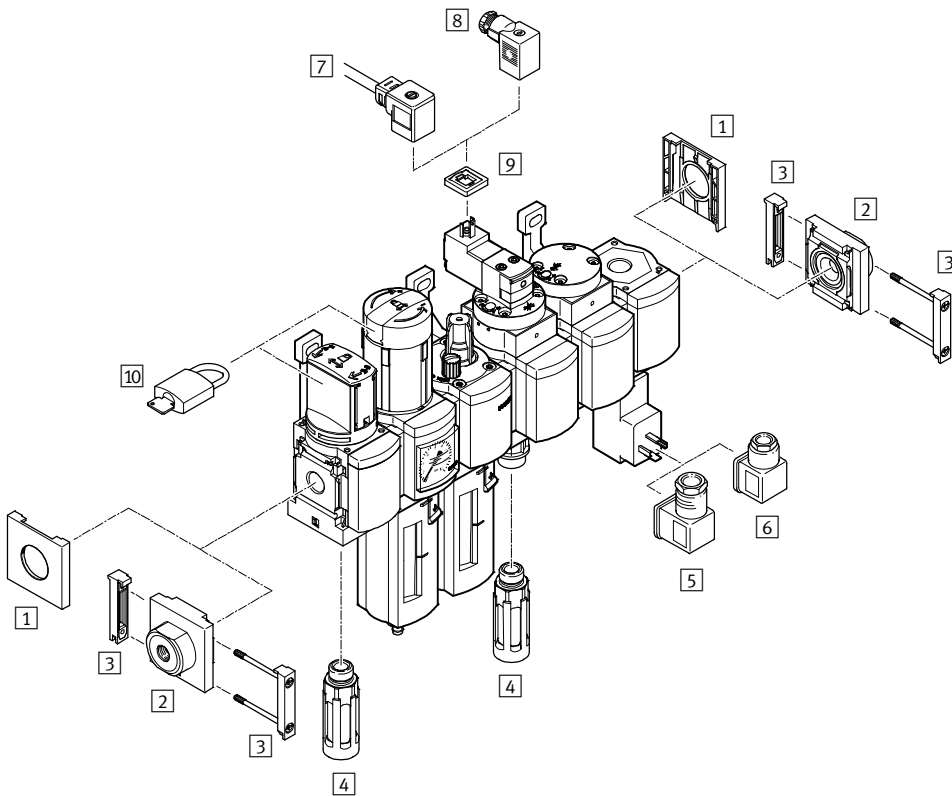
Product range overview


Combinations	Combination 1		Combination 2		Combination 3	
						
<b>Comprising:</b>						
Manually operated on-off valve	EM1	■	■	■	-	-
Filter regulator with pressure gauge, lockable	LFR	■	■	■	■	■
Lubricator	LOE	■	-	-	-	-
Solenoid actuated on-off valve	EE	-	-	-	■	■
Solenoid actuated on-off valve, with pressure sensor	EE	-	-	-	-	-
Pneumatically actuated soft-start valve	DL	-	-	-	■	■
Branching module with pressure switch	FRM	■	-	-	-	-
Branching module with pressure sensor	FRM	-	-	-	-	-
Mounting bracket	WP	■	■	■	■	■
<b>Type codes → Page</b>		10	10	10	10	10
<b>Technical data → Page</b>		11	14	14	18	18

Combinations	Combination 4		Combination 5		Combination 6		Combination 7	
								
<b>Comprising:</b>								
Manually operated on-off valve	EM1	■	■	■	■	■	■	■
Filter regulator with pressure gauge, lockable	LFR	■	■	■	■	■	■	■
Lubricator	LOE	-	-	-	■	-	-	-
Solenoid actuated on-off valve	EE	-	-	■	-	-	-	-
Solenoid actuated on-off valve, with pressure sensor	EE	-	-	-	-	-	■	■
Pneumatically actuated soft-start valve	DL	-	-	■	-	-	-	-
Branching module with pressure switch	FRM	■	-	■	-	-	-	-
Branching module with pressure sensor	FRM	-	■	-	-	-	-	-
Mounting bracket	WP	■	■	■	■	■	■	■
<b>Type codes → Page</b>		10	10	10	10	10	10	10
<b>Technical data → Page</b>		21	21	26	29	29	32	32

# Service unit combinations MSB4/MSB6, MS series

Peripherals overview



-  - Note  
 The choice of accessories depends on the selected service unit combination.  
 Range of accessories  
 → Peripherals pages of the individual devices

Mounting attachments and accessories		→ Page/Internet
1	Cover cap MS4/6-END	ms4-end, ms6-end
2	Connecting plate-SET MS4/6-AG...	ms4-ag, ms6-ag
3	Module connector MS4/6-MV	ms4-mv, ms6-mv
4	Silencer U	36
5	Angled socket PEV-1/4-WD-LED	36
6	Plug socket MSSD-C-4P	36
7	Plug socket with cable KMEB	36
8	Plug socket MSSD-EB	36
9	Illuminating seal MEB-LD	36
10	Padlock LRVS-D	36
-	Mounting bracket MS4/6-WP/WPB/WPE/WPM	ms4-wp, ms6-wp

# Service unit combinations MSB4/MSB6, MS series

Type codes

MSB 6 - 1/2 : C3 J1 D1 A1 F3 - WP

### Series

MSB	Service unit combination
-----	--------------------------

### Size

4	Grid dimension 40 mm
6	Grid dimension 62 mm

### Pneumatic connection

MSB4	
1/4	Thread G1/4
MSB6	
1/2	Thread G1/2

### Service unit combination

On-off valve		→ Internet: ms4-em1, ms6-em1
C3	MS...-EM1	
Filter regulator		→ Internet: ms4-lfr, ms6-lfr
J1	MS...-LFR-D7-ERM-AS	
J2	MS...-LFR-D7-ERV-AS	
J3	MS...-LFR-D7-CRM-AS	
J4	MS...-LFR-D7-CRV-AS	
J120	MS...-LFR-D6-ERM-MPAAS	
Soft-start valve		→ Internet: ms4-dl, ms6-dl
A1	MS...-DL	
Lubricator		→ Internet: ms4-loe, ms6-loe
M1	MS...-LOE-R	
On-off valve		→ Internet: ms4-ee, ms6-ee
D1	MS...-EE-V24	
D14	MS...-EE-10V24P-AD7	
Branching module		→ Internet: ms4-frm, ms6-frm
F3	MS...-FRM-Y	
F12	MS...-FRM-AD7	

### Type of mounting

WP	Mounting bracket
----	------------------

Further variants can be ordered using the modular system → [www.festo.com](http://www.festo.com)

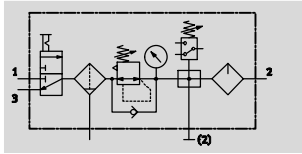
- Connection size
- Connecting plates
- Service unit equipment
- Alternative flow direction



# Service unit combinations MSB4/MSB6, MS series

Technical data – Combination 1

Function  
With condensate drain  
manual rotary



- On-off valve MS...-EM1 manually actuated
- Filter regulator MS...-LFR-D7 with pressure gauge
- Branching module MS...-FRM-Y with pressure switch without display
- Lubricator MS...-LOE-R
- Mounting bracket MS...-WP

- - Flow rate  
950 l/min
- - Temperature range  
-10 ... +60 °C
- - Pressure regulation range  
1 ... 12 bar
- - [www.festo.com](http://www.festo.com)



- For filtered and lubricated compressed air
- Supply pressure can be opened and closed
- Output pressure is infinitely adjustable within the pressure regulation range
- The unit is vented when switched off
- Electrical pressure monitoring with adjustable switching pressure
- Removal of filtered and unlubricated compressed air at the branching module connections

General technical data	
Size	MSB4
Pneumatic connection 1, 2, 3	G $\frac{1}{4}$
Regulating function	Output pressure constant, with primary pressure compensation, with return flow function, with secondary venting
Type of mounting	Via accessories
Assembly position	Vertical $\pm 5^\circ$
Grade of filtration [ $\mu\text{m}$ ]	40
Air purity class at the output	Compressed air in accordance with ISO 8573-1:2010 [7:4:4] (grade of filtration 40 $\mu\text{m}$ )
Bowl guard	Plastic bowl guard
Condensate drain	Manual rotary
Actuator lock	Rotary knob with detent, lockable with accessories
Pressure regulation range [bar]	1 ... 12
Pressure indicator	With pressure gauge

- - Note: This product conforms to ISO 1179-1 and to ISO 228-1

Standard nominal flow rate qnN [l/min]	
Size	MSB4
Grade of filtration	40 $\mu\text{m}$ 950


# Service unit combinations MSB4/MSB6, MS series

Technical data – Combination 1

Operating and environmental conditions	
Condensate drain	Manual rotary
Size	MSB4
Operating pressure [bar]	1.5 ... 14
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
	Inert gases
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)
Ambient temperature [°C]	-10 ... +60
Temperature of medium [°C]	-10 ... +60
Storage temperature [°C]	-10 ... +60
Corrosion resistance class CRC <sup>1)</sup>	2
Food-safe <sup>2)</sup>	See supplementary material information

- 1) Corrosion resistance class CRC 2 to Festo standard FN 940070  
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
- 2) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

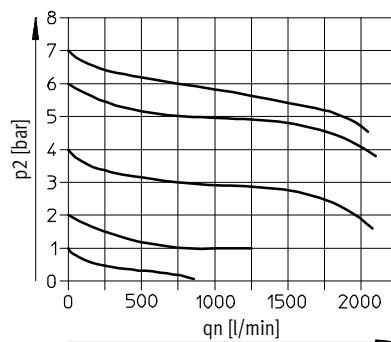
Weights [g]	
Size	MSB4
Service unit combination	1,700
Mounting bracket	40

 Note  
Materials → Technical data of the individual devices

## Standard flow rate $q_n$ as a function of output pressure $p_2$

Pressure regulation range 1 ... 12 bar    Grade of filtration 40  $\mu\text{m}$   
MSB4-1/4

Primary pressure  $p_1 = 10$  bar



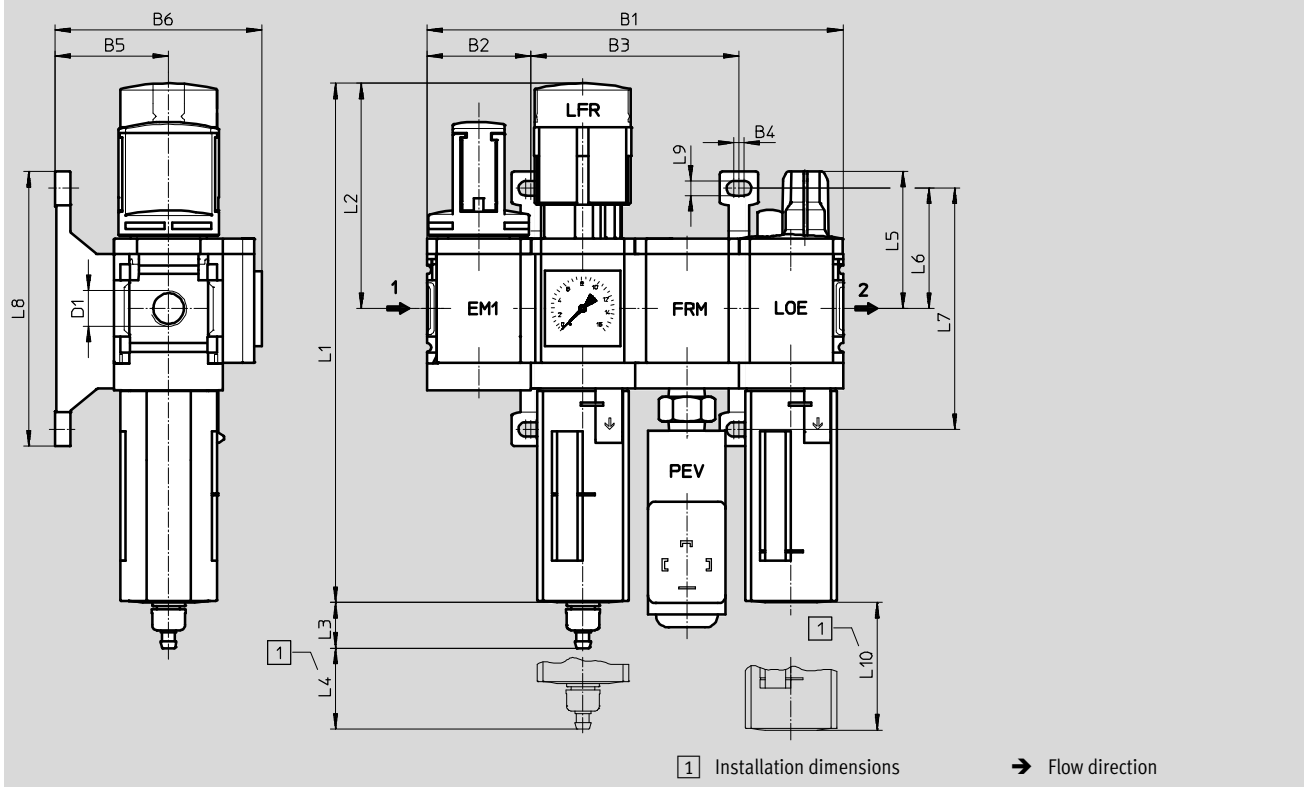
# Service unit combinations MSB4/MSB6, MS series

Technical data – Combination 1

**Dimensions**

Download CAD data → [www.festo.com](http://www.festo.com)

Manually actuated on-off valve, filter regulator with pressure gauge, branching module with pressure switch, lubricator



Type	B1	B2	B3	B4	B5	B6	D1	L1	L2
MSB4	160.8	40.2	80.4	4	44	80	G $\frac{1}{4}$	201	87

Type	L3	L4	L5	L6	L7	L8	L9	L10
MSB4	17.7	25	53	46.5	93.2	106	5.6	80

• Note: This product conforms to ISO 1179-1 and to ISO 228-1

**Ordering data**

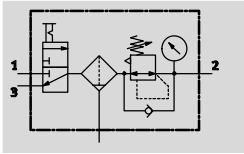
Size	Connection	Condensate drain	Grade of filtration [μm]	Part No.	Type
Pressure regulation range 1 ... 12 bar, pressure gauge with outer scale in bar and inner scale in psi					
MSB4	G $\frac{1}{4}$	Manual rotary	40	542295	MSB4- $\frac{1}{4}$ :C3J1F3M1-WP

# Service unit combinations MSB4/MSB6, MS series

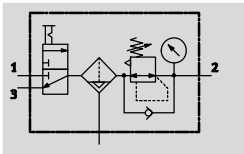
Technical data – Combination 2

**Function**

With condensate drain  
manual rotary



With condensate drain  
fully automatic



- - Flow rate  
950 ... 5,500 l/min
- - Temperature range  
-10 ... +60 °C
- - Pressure regulation  
range  
0.5 ... 12 bar
- - [www.festo.com](http://www.festo.com)



- On-off valve MS...-EM1 manually actuated
- Filter regulator MS...-LFR with pressure gauge
- Mounting bracket MS...-WP

- For filtered and unlubricated compressed air
- Supply pressure can be opened and closed
- Output pressure is infinitely adjustable within the pressure regulation range

General technical data		
Size	MSB4	MSB6
Pneumatic connection 1, 2, 3	G $\frac{1}{4}$	G $\frac{1}{2}$
Regulating function	Output pressure constant, with primary pressure compensation, with return flow function, with secondary venting	
Type of mounting	Via accessories	
Assembly position	Vertical $\pm 5^\circ$	
Grade of filtration $[\mu\text{m}]$	5	
	40	
Air purity class at the output	Compressed air in accordance with ISO 8573-1:2010 [6:4:4] (grade of filtration 5 $\mu\text{m}$ )	
	Compressed air in accordance with ISO 8573-1:2010 [7:4:4] (grade of filtration 40 $\mu\text{m}$ )	
Bowl guard	Plastic bowl guard	
Condensate drain	Manual rotary	
	Fully automatic	
Actuator lock	Rotary knob with detent, lockable with accessories	
Pressure regulation range [bar]	0.5 ... 7	
	0.5 ... 12	
Pressure indicator	With pressure gauge	

- - Note: This product conforms to ISO 1179-1 and to ISO 228-1

Standard nominal flow rate $q_{nN}$ [l/min]					
Condensate drain	Manual rotary			Fully automatic	
	MSB4	MSB6	MSB4	MSB6	
Pressure regulation range 0.5 ... 7 bar					
Grade of filtration	40 $\mu\text{m}$	1,150	5,500	-	-
Pressure regulation range 0.5 ... 12 bar					
Grade of filtration	5 $\mu\text{m}$	950	4,800	950	4,800
	40 $\mu\text{m}$	1,700	5,100	1,000	5,100

- - 125 l/min must be available for the fully automatic condensate drain to close correctly.


# Service unit combinations MSB4/MSB6, MS series

Technical data – Combination 2

Operating and environmental conditions				
Condensate drain	Manual rotary		Fully automatic	
Size	MSB4	MSB6	MSB4	MSB6
Operating pressure [bar]	0.8 ... 14	0.8 ... 18	2 ... 12	2 ... 12
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4] Inert gases			
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)			
Ambient temperature [°C]	-10 ... +60		+5 ... +60	
Temperature of medium [°C]	-10 ... +60		+5 ... +60	
Storage temperature [°C]	-10 ... +60		-10 ... +60	
Corrosion resistance class CRC <sup>1)</sup>	2			
Food-safe <sup>2)</sup>	See supplementary material information			

- 1) Corrosion resistance class CRC 2 to Festo standard FN 940070  
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
- 2) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

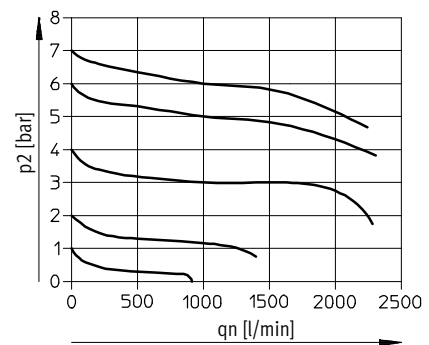
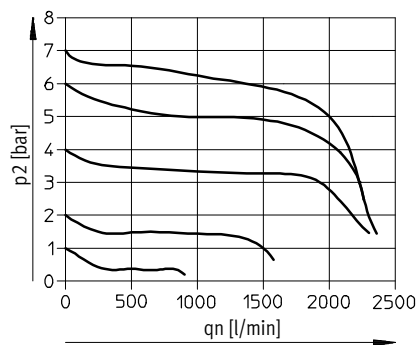
Weights [g]		
Size	MSB4	MSB6
Service unit combination	1,300	1,100
Mounting bracket	40	76

 Note  
Materials → Technical data of the individual devices

## Standard flow rate qn as a function of output pressure p2

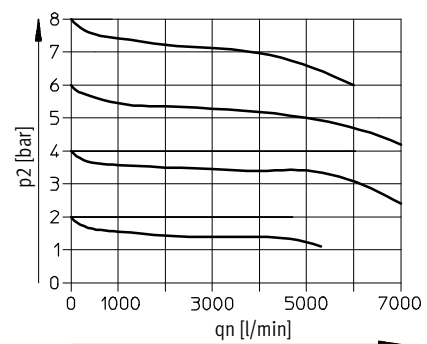
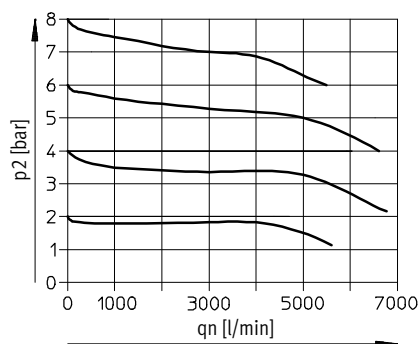
Pressure regulation range 0.5 ... 12 bar    Grade of filtration 5 µm    Grade of filtration 40 µm  
MSB4-1/4

Primary pressure p1 = 10 bar



## MSB6-1/2

Primary pressure p1 = 10 bar



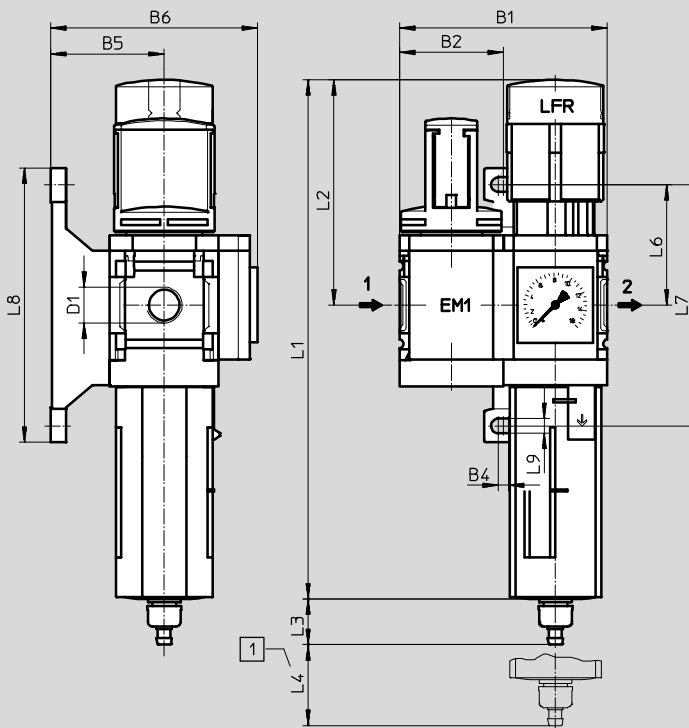
# Service unit combinations MSB4/MSB6, MS series

Technical data – Combination 2

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Manually actuated on-off valve, filter regulator with pressure gauge



1 Installation dimensions

→ Flow direction

Type	B1	B2	B4	B5	B6	D1	L1	L2
MSB4	80.4	40.2	4	44	80	G $\frac{1}{4}$	201	87
MSB6	124	62	4.5	54	100	G $\frac{1}{2}$	285	134.5

Type	L3 Condensate drain		L4	L6	L7	L8	L9
	Manual rotary	Fully automatic					
MSB4	17.7	20.4	25	46.5	93.2	106	5.6
MSB6	15.8	18.5	68	71	142	158	6.6

• • Note: This product conforms to ISO 1179-1 and to ISO 228-1

## Service unit combinations MSB4/MSB6, MS series

FESTO

Technical data – Combination 2

### ★ Core product range

Ordering data					
Size	Connection	Condensate drain	Grade of filtration [µm]	Part No.	Type
Pressure regulation range 0.5 ... 12 bar, pressure gauge with outer scale in bar and inner scale in psi					
MSB4	G1/4	Manual rotary	40	★ 8025354	MSB4-1/4:C3:J1-WP
MSB6	G1/2	Manual rotary	40	★ 8025355	MSB6-1/2:C3:J1-WP

Ordering data					
Size	Connection	Condensate drain	Grade of filtration [µm]	Part No.	Type
Pressure regulation range 0.5 ... 7 bar, pressure gauge with outer scale in MPa					
MSB4	G1/4	Manual rotary	40	8042668	MSB4-1/4:C3:J120-WP
MSB6	G1/2	Manual rotary	40	8042672	MSB6-1/2:C3:J120-WP
Pressure regulation range 0.5 ... 12 bar, pressure gauge with outer scale in bar and inner scale in psi					
MSB4	G1/4	Manual rotary	5	542304	MSB4-1/4:C3J3-WP
		Fully automatic	40	542298	MSB4-1/4:C3J2-WP
			5	542310	MSB4-1/4:C3J4-WP
MSB6	G1/2	Manual rotary	5	542280	MSB6-1/2:C3J3-WP
		Fully automatic	40	542274	MSB6-1/2:C3J2-WP
			5	542286	MSB6-1/2:C3J4-WP

Festo core product range

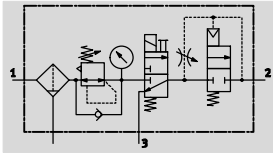
- ★ Generally ready for shipping ex works in 24 hours
- ☆ Generally ready for shipping ex works in 5 days

# Service unit combinations MSB4/MSB6, MS series

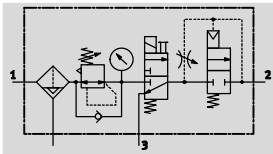
Technical data – Combination 3

**Function**

With condensate drain  
manual rotary



With condensate drain  
fully automatic



- - Flow rate  
750 ... 3,100 l/min
- - Temperature range  
-10 ... +60 °C
- - Pressure regulation  
range  
4 ... 12 bar
- - [www.festo.com](http://www.festo.com)



- Filter regulator MS...-LFR-D7 with pressure gauge
- On-off valve MS...-EE-V24 solenoid actuated
- Soft-start valve MS...-DL pneumatically actuated
- Mounting bracket MS...-WP

- For filtered and unlubricated compressed air
- Output pressure is infinitely adjustable within the pressure regulation range
- Gradual pressure build-up prevents sudden, unpredictable movements
- When supply pressure is closed, quick venting ensures rapid pressure reduction

General technical data		
Size	MSB4	MSB6
Pneumatic connection 1, 2, 3	G $\frac{1}{4}$	G $\frac{1}{2}$
Regulating function	Output pressure constant, with primary pressure compensation, with return flow function, with secondary venting	
Type of mounting	Via accessories	
Assembly position	Vertical $\pm 5^\circ$	
Grade of filtration [ $\mu\text{m}$ ]	40	
Air purity class at the output	Compressed air in accordance with ISO 8573-1:2010 [7:4:-] (grade of filtration 40 $\mu\text{m}$ )	
Bowl guard	Plastic bowl guard	
Condensate drain	Manual rotary	
	-	Fully automatic
Actuator lock	Rotary knob with detent, lockable with accessories	
Pressure regulation range [bar]	4 ... 12	
Pressure indicator	With pressure gauge	
Coil characteristics	24 V DC: 1.5 W	24 V DC: 1.5 W

- - Note: This product conforms to ISO 1179-1 and to ISO 228-1

Standard nominal flow rate qnN [l/min]		
Size	MSB4	MSB6
Grade of filtration	40 $\mu\text{m}$	750
		3,100

- - 125 l/min must be available for the fully automatic condensate drain to close correctly.



# Service unit combinations MSB4/MSB6, MS series

Technical data – Combination 3


Operating and environmental conditions			
Condensate drain	Manual rotary		Fully automatic
Size	MSB4	MSB6	MSB6
Operating pressure [bar]	4.5 ... 14	4.5 ... 18	4.5 ... 12
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [-:4:-]		Compressed air in accordance with ISO 8573-1:2010 [7:4:-]
	Inert gases		
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)		
Ambient temperature [°C]	-10 ... +60		+5 ... +60
Temperature of medium [°C]	-10 ... +60		+5 ... +60
Storage temperature [°C]	-10 ... +60		-10 ... +60
Corrosion resistance class CRC <sup>1)</sup>	2		
Food-safe <sup>2)</sup>	See supplementary material information		

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

2) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

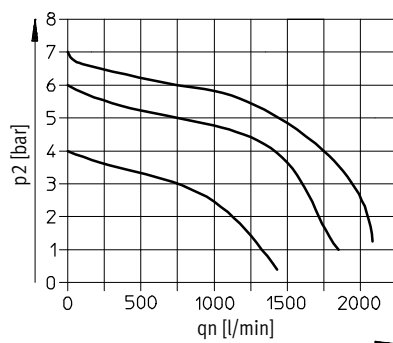
Weights [g]		
Size	MSB4	MSB6
Service unit combination	1,600	2,400
Mounting bracket	40	76

 Note  
Materials → Technical data of the individual devices

## Standard flow rate $q_n$ as a function of output pressure $p_2$

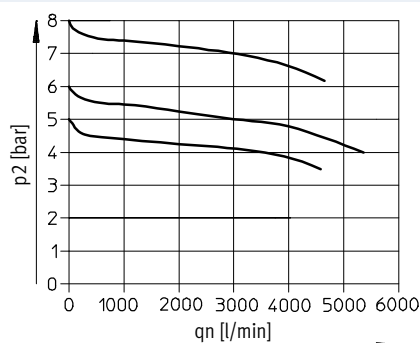
Pressure regulation range 4 ... 12 bar  
MSB4-1/4

Primary pressure  $p_1 = 10$  bar



## MSB6-1/2

Primary pressure  $p_1 = 10$  bar

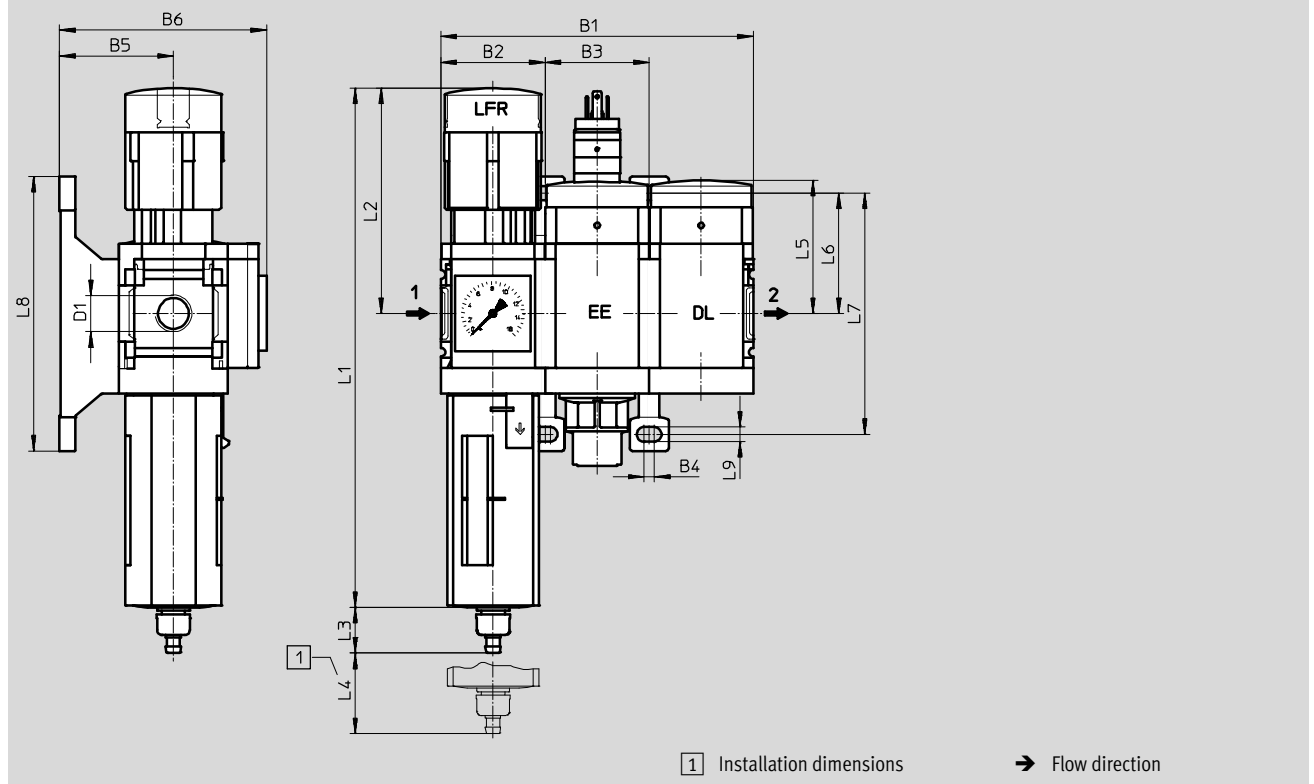


# Service unit combinations MSB4/MSB6, MS series

Technical data – Combination 3

Dimensions Download CAD data → [www.festo.com](http://www.festo.com)

Filter regulator with pressure gauge, solenoid actuated on-off valve, pneumatically actuated soft-start valve



1 Installation dimensions → Flow direction

Type	B1	B2	B3	B4	B5	B6	D1	L1	L2
MSB4	120.6	40.2	40.2	4	44	80	G $\frac{1}{4}$	201	87
MSB6	186	62	62	4.5	54	100	G $\frac{1}{2}$	285	134.5

Type	L3 Condensate drain		L4	L5	L6	L7	L8	L9
	Manual rotary	Fully automatic						
MSB4	17.7	–	25	51.7	46.5	93.2	106	5.6
MSB6	15.8	18.5	68	71	71	142	158	6.6

Note: This product conforms to ISO 1179-1 and to ISO 228-1

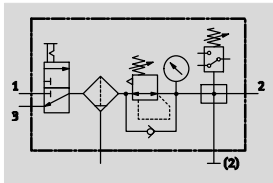
Ordering data					
Size	Connection	Condensate drain	Grade of filtration [ $\mu$ m]	Part No.	Type
Pressure regulation range 4 ... 12 bar, pressure gauge with outer scale in bar and inner scale in psi					
MSB4	G $\frac{1}{4}$	Manual rotary	40	531101	MSB4- $\frac{1}{4}$ :j1D1A1-WP
MSB6	G $\frac{1}{2}$	Manual rotary	40	530222	MSB6- $\frac{1}{2}$ :j1D1A1-WP
		Fully automatic	40	530224	MSB6- $\frac{1}{2}$ :j2D1A1-WP

# Service unit combinations MSB4/MSB6, MS series

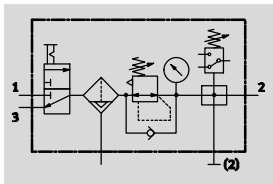
Technical data – Combination 4

**Function**

With condensate drain,  
manual rotary



With condensate drain,  
fully automatic



- Flow rate  
1,300 ... 5,300 l/min
- Temperature range  
-10 ... +60 °C
- Pressure regulation range  
0.5 ... 12 bar
- [www.festo.com](http://www.festo.com)



- Manually operated on-off valve MS...-EM1
- Filter regulator MS...-LFR with pressure gauge
- Branching module MS...-FRM-Y with pressure switch or MS...-FRM-AD7 with pressure sensor for displaying output pressure via operational status indicator
- Mounting bracket MS...-WP

- For filtered and unlubricated compressed air supply
- Supply pressure can be opened and closed
- Output pressure is infinitely adjustable within the pressure regulation range
- Electrical pressure monitoring with adjustable switching pressure

General technical data				
Size	MSB4		MSB6	
Branching module with	Pressure switch	Pressure sensor	Pressure switch	Pressure sensor
Pneumatic connection 1, 2, 3	G1/4		G1/2	
Regulator function	Output pressure constant, with primary pressure compensation, with return flow, with secondary venting			
Type of mounting	Via accessories			
Mounting position	Vertical ±5°			
Grade of filtration [µm]	40			
Air purity class at the output	Compressed air according to ISO 8573-1:2010 [7:4:4] (grade of filtration 40 µm)			
Bowl guard	Plastic bowl guard			
Condensate drain	Manual rotary	Manual rotary	Manual rotary	Manual rotary
	Fully automatic	–	Fully automatic	–
Actuation security	Rotary knob with detent, can be locked using accessories			
Pressure regulation range [bar]	–	0.5 ... 7	–	0.5 ... 7
	0.5 ... 12	0.5 ... 10	0.5 ... 12	0.5 ... 10
Pressure indication	Via pressure gauge for displaying output pressure			

–||– Note: This product conforms to ISO 1179-1 and to ISO 228-1

Standard nominal flow rate qnN [l/min]				
Size	MSB4		MSB6	
Branching module with	Pressure switch	Pressure sensor	Pressure switch	Pressure sensor
Pressure regulation range 0.5 ... 7 bar				
Grade of filtration 40 µm	–	1,750	–	5,300
Pressure regulation range 0.5 ... 10 bar				
Grade of filtration 40 µm	–	1,600	–	4,500
Pressure regulation range 0.5 ... 12 bar				
Grade of filtration 40 µm	1,300	–	4,500	–

–||– 125 l/min must be available for the fully automatic condensate drain to close correctly.


# Service unit combinations MSB4/MSB6, MS series

Technical data – Combination 4

Operating and environmental conditions						
Condensate drain	Manual rotary				Fully automatic	
Size	MSB4		MSB6		MSB4	MSB6
Branching module with	Pressure switch	Pressure sensor	Pressure switch	Pressure sensor	Pressure switch	Pressure switch
Operating pressure [bar]	0.8 ... 14		0.8 ... 18		2 ... 12	2 ... 12
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]					
	Inert gases					
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)					
Ambient temperature [°C]	-10 ... +60	0 ... +50	-10 ... +60	0 ... +50	+5 ... +60	
Temperature of medium [°C]	-10 ... +60	0 ... +50	-10 ... +60	0 ... +50	+5 ... +60	
Storage temperature [°C]	-10 ... +60				-10 ... +60	
Corrosion resistance class CRC <sup>1)</sup>	2					
Food-safe <sup>2)</sup>	See supplementary material information					

- 1) Corrosion resistance class CRC 2 to Festo standard FN 940070  
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
- 2) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

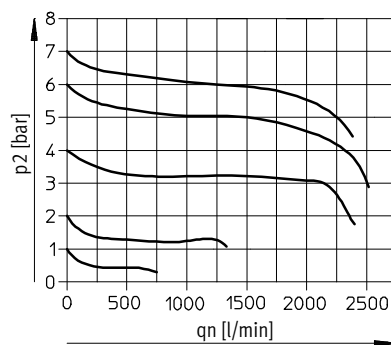
Weight [g]		
Size	MSB4	MSB6
Service unit combination	1,500	2,000
Mounting bracket	40	76

 Note  
Materials → Technical data of the individual devices

## Standard flow rate $q_n$ as a function of output pressure $p_2$

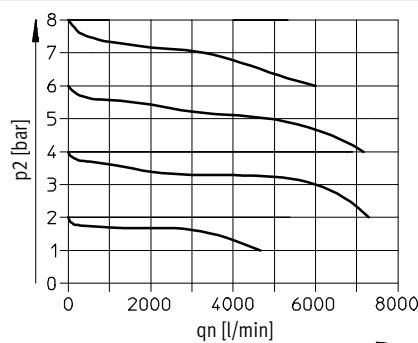
Pressure regulation range 0.5 ... 12 bar    Grade of filtration 40 µm  
MSB4-1/4

Primary pressure  $p_1 = 10$  bar



## MSB6-1/2

Primary pressure  $p_1 = 10$  bar



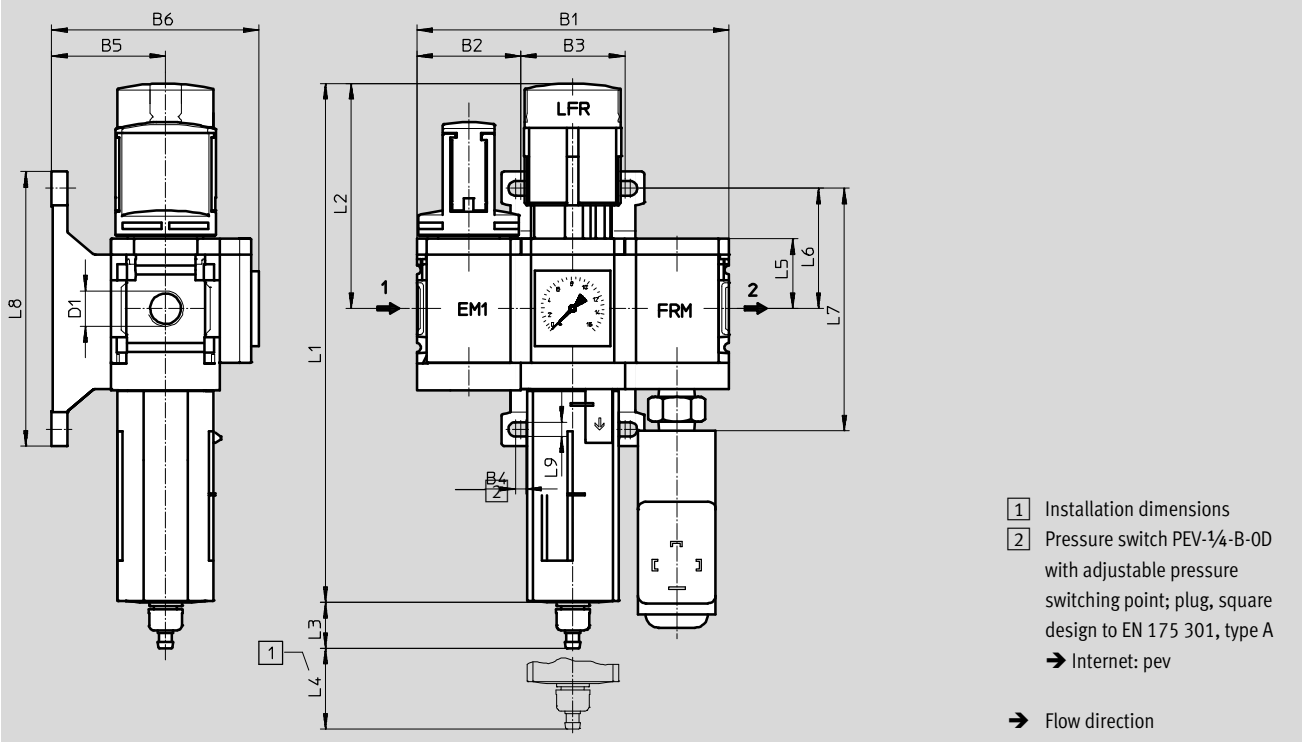
# Service unit combinations MSB4/MSB6, MS series

Technical data – Combination 4

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Manually actuated on-off valve, filter regulator with pressure gauge, branching module with pressure switch



Type	B1	B2	B3	B4	B5	B6	D1	L1	L2
MSB4	120.6	40.2	40.2	4	44	80	G1/4	201	87
MSB6	186	62	62	4.5	54	100	G1/2	285	134.5

Type	L3 Condensate drain		L4	L5	L6	L7	L8	L9
	Manual rotary	Fully automatic						
MSB4	17.7	20.4	25	27	46.5	93.2	106	5.6
MSB6	15.8	18.5	68	39	71	142	158	6.6

Note: This product conforms to ISO 1179-1 and to ISO 228-1

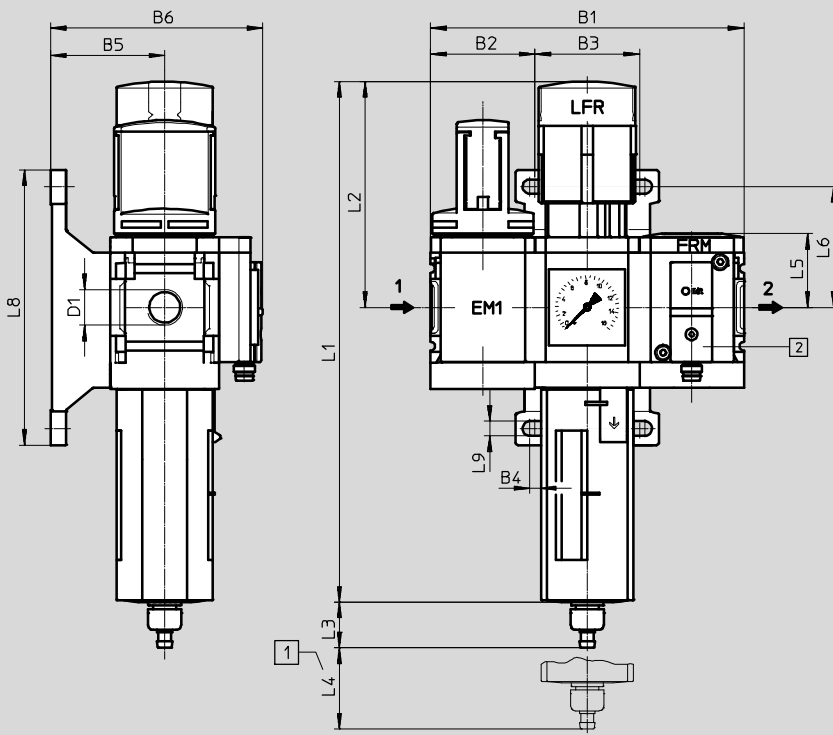
# Service unit combinations MSB4/MSB6, MS series

Technical data – Combination 4

**Dimensions**

Download CAD data → [www.festo.com](http://www.festo.com)

Manually actuated on-off valve, filter regulator with pressure gauge, branching module with pressure sensor



- 1 Installation dimensions
- 2 Pressure sensor SDE5-D10-O-...-P-M8 with 3-pin plug M8x1, threshold value comparator, 1 switching output PNP, N/O contact  
→ Internet: sde5

→ Flow direction

Type	B1	B2	B3	B4	B5	B6	D1
MSB4	120.6	40.2	40.2	4	44	82	G $\frac{1}{4}$
MSB6	186	62	62	4.5	54	102	G $\frac{1}{2}$

Type	L1	L2	L3	L4	L5	L6	L8	L9
MSB4	201	87	17.7	25	29.4	46.5	106	5.6
MSB6	285	134.5	15.8	68	41.7	71	158	6.6

• Note: This product conforms to ISO 1179-1 and to ISO 228-1

## Service unit combinations MSB4/MSB6, MS series

FESTO

Technical data – Combination 4

### ★ Core product range

Ordering data					
Size	Connection	Condensate drain	Grade of filtration [µm]	Part No.	Type
Pressure regulation range 0.5 ... 10 bar, pressure gauge with outer scale in bar and inner scale in psi, branching module with pressure sensor					
MSB4	G1/4	Manual rotary	40	★ 8025356	MSB4-1/4:C3:J1:F12-WP
MSB6	G1/2	Manual rotary	40	★ 8025357	MSB6-1/2:C3:J1:F12-WP

Ordering data					
Size	Connection	Condensate drain	Grade of filtration [µm]	Part No.	Type
Pressure regulation range 0.5 ... 7 bar, pressure gauge with outer scale in MPa, branching module with pressure sensor					
MSB4	G1/4	Manual rotary	40	8042667	MSB4-1/4:C3:J120:F12-WP
MSB6	G1/2	Manual rotary	40	8042671	MSB6-1/2:C3:J120:F12-WP
Pressure regulation range 0.5 ... 12 bar, pressure gauge with outer scale in bar and inner scale in psi, branching module with pressure switch					
MSB4	G1/4	Manual rotary	40	542294	MSB4-1/4:C3J1F3-WP
		Fully automatic	40	542300	MSB4-1/4:C3J2F3-WP
MSB6	G1/2	Manual rotary	40	542270	MSB6-1/2:C3J1F3-WP
		Fully automatic	40	542276	MSB6-1/2:C3J2F3-WP

Festo core product range

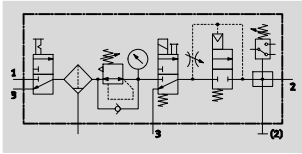
- ★ Generally ready for shipping ex works in 24 hours
- ☆ Generally ready for shipping ex works in 5 days

# Service unit combinations MSB4/MSB6, MS series

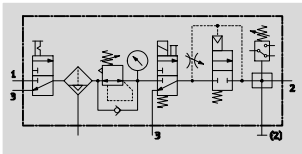
Technical data – Combination 5

**Function**

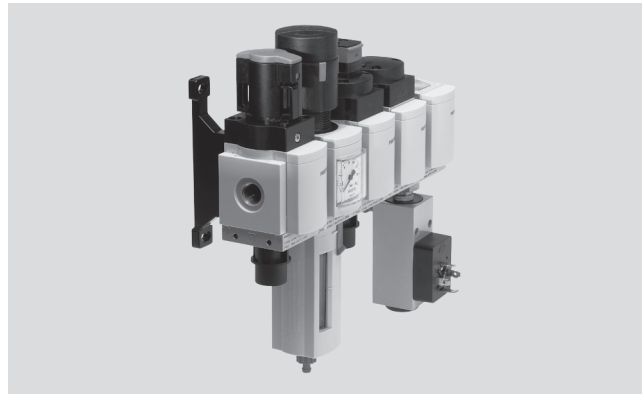
With condensate drain  
manual rotary



With condensate drain  
fully automatic



- - Flow rate  
750 ... 3,100 l/min
- - Temperature range  
-10 ... +60 °C
- - Pressure regulation  
range  
4 ... 12 bar
- - [www.festo.com](http://www.festo.com)



- On-off valve MS...-EM1 manually actuated
- Filter regulator MS...-LFR-D7 with pressure gauge
- On-off valve MS...-EE-V24 solenoid actuated
- Soft-start valve MS...-DL pneumatically actuated
- Branching module MS...-FRM-Y with pressure switch without display
- Mounting bracket MS...-WP

- For filtered and unlubricated compressed air
- Supply pressure can be opened and closed
- Output pressure is infinitely adjustable within the pressure regulation range
- Gradual pressure build-up prevents sudden, unpredictable movements
- To shut-off and vent the following device or the system
- Electrical pressure monitoring with adjustable switching pressure

General technical data		
Size	MSB4	MSB6
Pneumatic connection 1, 2, 3	G1/4	G1/2
Regulating function	Output pressure constant, with primary pressure compensation, with return flow function, with secondary venting	
Type of mounting	Via accessories	
Assembly position	Vertical ±5°	
Grade of filtration [µm]	- 40	5
Air purity class at the output	Compressed air in accordance with ISO 8573-1:2010 [6:4:4] (grade of filtration 5 µm) Compressed air in accordance with ISO 8573-1:2010 [7:4:4] (grade of filtration 40 µm)	
Bowl guard	Plastic bowl guard	
Condensate drain	Manual rotary Fully automatic	
Actuator lock	Rotary knob with detent, lockable with accessories	
Pressure regulation range [bar]	4 ... 12	
Pressure indicator	With pressure gauge	
Coil characteristics	24 V DC: 1.5 W	24 V DC: 1.5 W

- || - Note: This product conforms to ISO 1179-1 and to ISO 228-1

Standard nominal flow rate qnN [l/min]			
Size	MSB4		MSB6
Grade of filtration	5 µm	-	3,000
	40 µm	750	3,100

- || - 125 l/min must be available for the fully automatic condensate drain to close correctly.




# Service unit combinations MSB4/MSB6, MS series

Technical data – Combination 5

Operating and environmental conditions				
Condensate drain	Manual rotary		Fully automatic	
Size	MSB4	MSB6	MSB4	MSB6
Operating pressure [bar]	4.5 ... 14	4.5 ... 18	4.5 ... 12	4.5 ... 12
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]			
	Inert gases			
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)			
Ambient temperature [°C]	-10 ... +60		+5 ... +60	
Temperature of medium [°C]	-10 ... +60		+5 ... +60	
Storage temperature [°C]	-10 ... +60		-10 ... +60	
Corrosion resistance class CRC <sup>1)</sup>	2			
Food-safe <sup>2)</sup>	See supplementary material information			

- 1) Corrosion resistance class CRC 2 to Festo standard FN 940070  
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
- 2) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

Weights [g]		
Size	MSB4	MSB6
Service unit combination	2,200	3,500
Mounting bracket	40	76

 Note  
Materials → Technical data of the individual devices

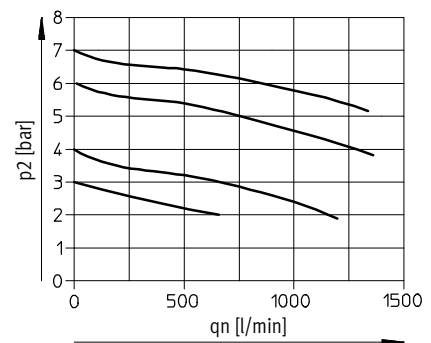
## Standard flow rate qn as a function of output pressure p2

Pressure regulation range 4 ... 12 bar  
MSB4-1/4

Primary pressure p1 = 10 bar

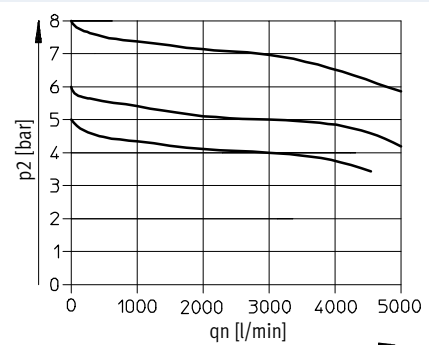
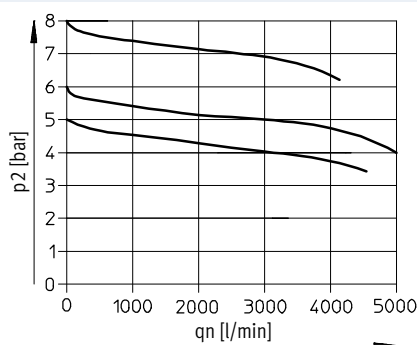
Grade of filtration 5 µm

Grade of filtration 40 µm



## MSB6-1/2

Primary pressure p1 = 10 bar



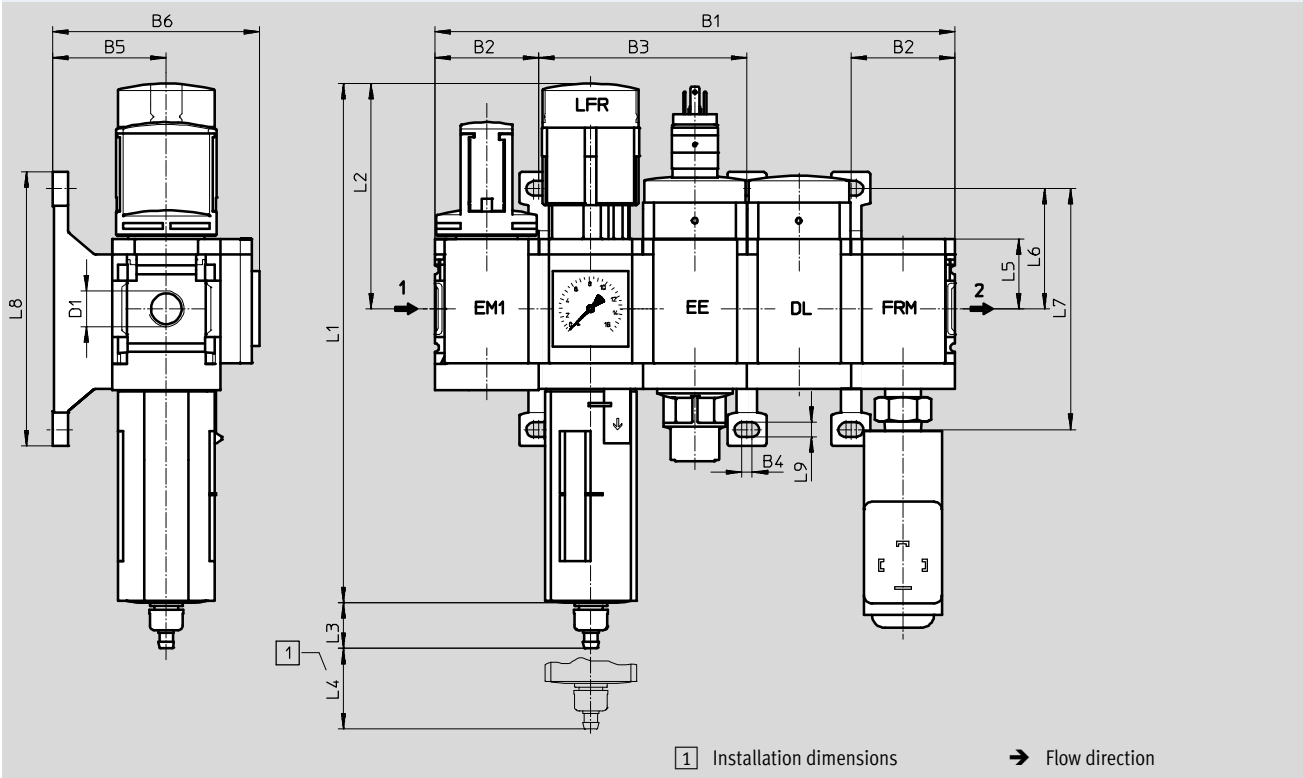
# Service unit combinations MSB4/MSB6, MS series

Technical data – Combination 5

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Manually actuated on-off valve, filter regulator with pressure gauge, solenoid actuated on-off valve, pneumatically actuated soft-start valve, branching module with pressure switch



Type	B1	B2	B3	B4	B5	B6	D1	L1	L2
MSB4	201	40.2	80.4	4	44	80	G $\frac{1}{4}$	201	87
MSB6	310	62	124	4.5	54	100	G $\frac{1}{2}$	285	134.5

Type	L3 Condensate drain		L4	L5	L6	L7	L8	L9
	Manual rotary	Fully automatic						
MSB4	17.7	20.4	25	27	46.5	93.2	106	5.6
MSB6	15.8	18.5	68	39	71	142	158	6.6

– Note: This product conforms to ISO 1179-1 and to ISO 228-1

## Ordering data

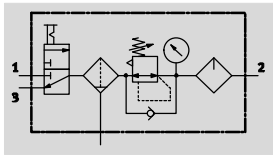
Size	Connection	Condensate drain	Grade of filtration [µm]	Part No.	Type
Pressure regulation range 4 ... 12 bar, pressure gauge with outer scale in bar and inner scale in psi					
MSB4	G $\frac{1}{4}$	Manual rotary	40	542293	MSB4- $\frac{1}{4}$ :C3J1D1A1F3-WP
		Fully automatic	40	542299	MSB4- $\frac{1}{4}$ :C3J2D1A1F3-WP
MSB6	G $\frac{1}{2}$	Manual rotary	40	542269	MSB6- $\frac{1}{2}$ :C3J1D1A1F3-WP
			5	542281	MSB6- $\frac{1}{2}$ :C3J3D1A1F3-WP
		Fully automatic	40	542275	MSB6- $\frac{1}{2}$ :C3J2D1A1F3-WP
			5	542287	MSB6- $\frac{1}{2}$ :C3J4D1A1F3-WP

# Service unit combinations MSB4/MSB6, MS series

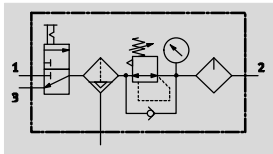
Technical data – Combination 6

**Function**

With condensate drain  
manual rotary



With condensate drain  
fully automatic



- On-off valve MS...-EM1 manually actuated
- Filter regulator MS...-LFR-D7 with pressure gauge
- Lubricator MS...-LOE-R
- Mounting bracket MS...-WP

- - Flow rate  
750 ... 3,100 l/min
- - Temperature range  
-10 ... +60 °C
- - Pressure regulation range  
1 ... 12 bar
- - [www.festo.com](http://www.festo.com)



- For filtered and lubricated compressed air
- Supply pressure can be opened and closed
- Output pressure is infinitely adjustable within the pressure regulation range

General technical data		
Size	MSB4	MSB6
Pneumatic connection 1, 2, 3	G1/4	G1/2
Regulating function	Output pressure constant, with primary pressure compensation, with return flow function, with secondary venting	
Type of mounting	Via accessories	
Assembly position	Vertical ±5°	
Grade of filtration [µm]	40	
Air purity class at the output	Compressed air in accordance with ISO 8573-1:2010 [7:4:4] (grade of filtration 40 µm)	
Bowl guard	Plastic bowl guard	
Condensate drain	Manual rotary	
	-	Fully automatic
Actuator lock	Rotary knob with detent, lockable with accessories	
Pressure regulation range [bar]	1 ... 12	
Pressure indicator	With pressure gauge	

- - Note: This product conforms to ISO 1179-1 and to ISO 228-1

Standard nominal flow rate qnN [l/min]		
Size	MSB4	MSB6
Grade of filtration 40 µm	750	3,100

- - 125 l/min must be available for the fully automatic condensate drain to close correctly.


# Service unit combinations MSB4/MSB6, MS series

Technical data – Combination 6

Operating and environmental conditions			
Condensate drain	Manual rotary		Fully automatic
Size	MSB4	MSB6	MSB6
Operating pressure [bar]	1.5 ... 14	1.5 ... 18	2 ... 12
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]		
	Inert gases		
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)		
Ambient temperature [°C]	-10 ... +60		+5 ... +60
Temperature of medium [°C]	-10 ... +60		+5 ... +60
Storage temperature [°C]	-10 ... +60		-10 ... +60
Corrosion resistance class CRC <sup>1)</sup>	2		
Food-safe <sup>2)</sup>	See supplementary material information		

- 1) Corrosion resistance class CRC 2 to Festo standard FN 940070  
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
- 2) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

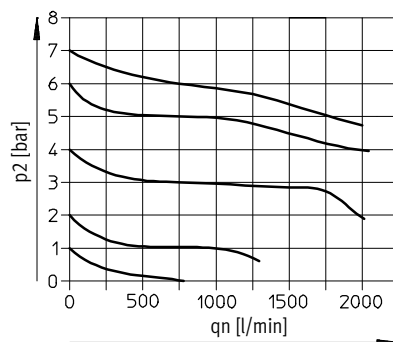
Weights [g]		
Size	MSB4	MSB6
Service unit combination	1,500	1,750
Mounting bracket	40	76

 Note  
Materials → Technical data of the individual devices

## Standard flow rate $q_n$ as a function of output pressure $p_2$

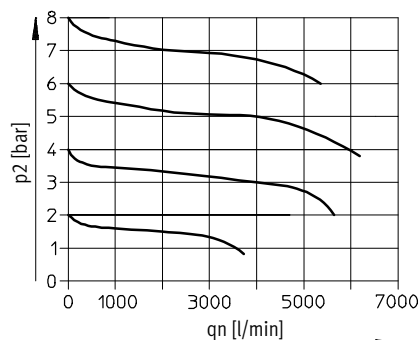
Pressure regulation range 1 ... 12 bar    Grade of filtration 40  $\mu\text{m}$     Grade of filtration 5  $\mu\text{m}$   
MSB4-1/4

Primary pressure  $p_1 = 10$  bar



## MSB6-1/2

Primary pressure  $p_1 = 10$  bar



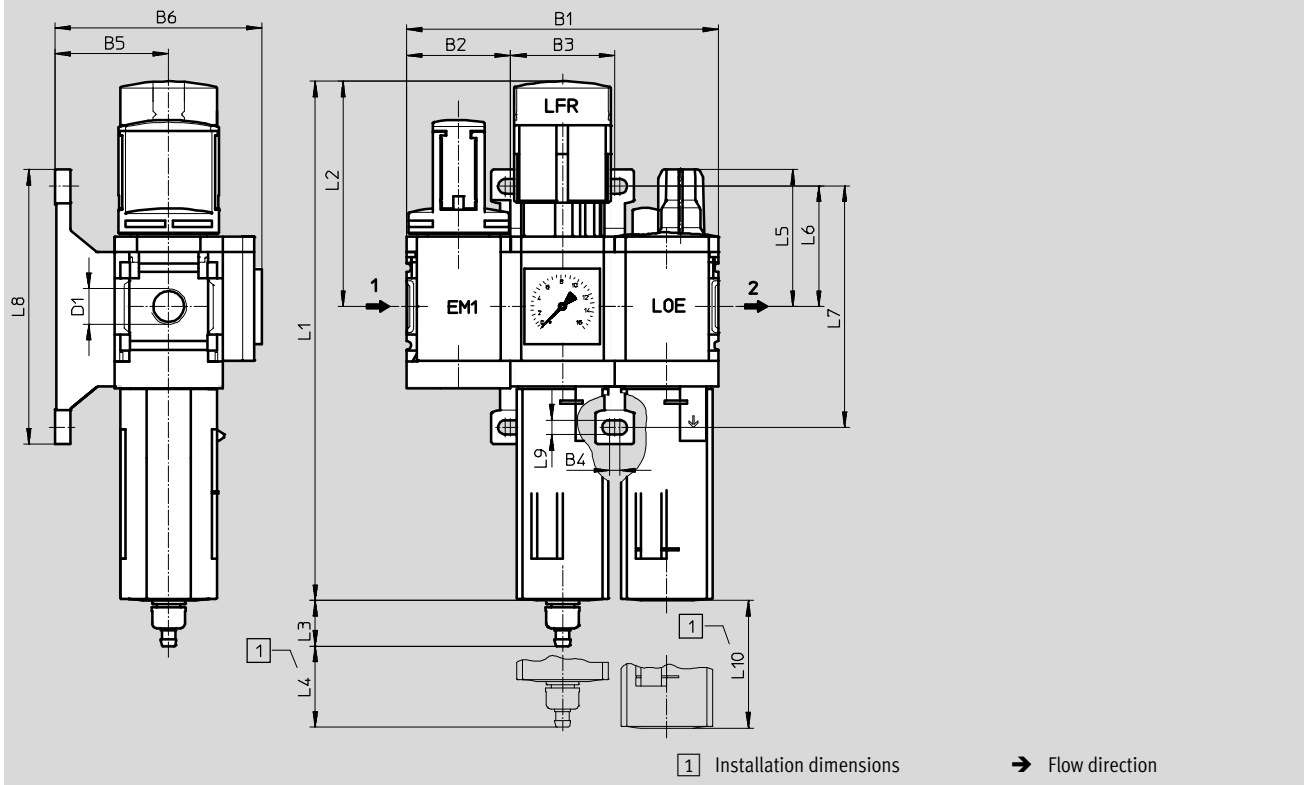
# Service unit combinations MSB4/MSB6, MS series

Technical data – Combination 6

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Manually actuated on-off valve, filter regulator with pressure gauge, lubricator



Type	B1	B2	B3	B4	B5	B6	D1	L1	L2
MSB4	120.6	40.2	40.2	4	44	80	G $\frac{1}{4}$	201	87
MSB6	186	62	62	4.5	54	100	G $\frac{1}{2}$	285	134.5

Type	L3 Condensate drain		L4	L5	L6	L7	L8	L9	L10
	Manual rotary	Fully automatic							
MSB4	17.7	–	25	53	46.5	93.2	106	5.6	80
MSB6	15.8	18.5	68	66	71	142	158	6.6	130

– † – Note: This product conforms to ISO 1179-1 and to ISO 228-1

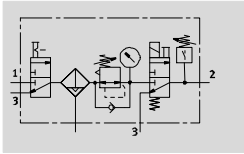
## Ordering data

Size	Connection	Condensate drain	Grade of filtration [ $\mu$ m]	Part No.	Type
Pressure regulation range 1 ... 12 bar, pressure gauge with outer scale in bar and inner scale in psi					
MSB4	G $\frac{1}{4}$	Manual rotary	40	542296	MSB4- $\frac{1}{4}$ :C3J1M1-WP
MSB6	G $\frac{1}{2}$	Manual rotary	40	542272	MSB6- $\frac{1}{2}$ :C3J1M1-WP
		Fully automatic	40	542278	MSB6- $\frac{1}{2}$ :C3J2M1-WP

# Service unit combinations MSB4/MSB6, MS series

Technical data – Combination 7

Function  
With condensate drain,  
manual rotary



- Manually operated on-off valve MS...-EM1
- Filter regulator MS...-LFR with pressure gauge
- Solenoid actuated on-off valve MS...-EE-10V24P-AD7, with pressure sensor for displaying output pressure via operational status indicator
- Mounting bracket MS...-WP

- Flow rate  
1,400 ... 4,400 l/min
- Temperature range  
0 ... +50 °C
- Pressure regulation range  
0.5 ... 10 bar
- [www.festo.com](http://www.festo.com)



- For filtered and unlubricated compressed air supply
- Supply pressure can be opened and closed
- Output pressure is infinitely adjustable within the pressure regulation range
- When the supply pressure is closed, quick venting ensures rapid pressure reduction
- Electrical pressure monitoring with adjustable switching pressure

General technical data		
Size	MSB4	MSB6
Pneumatic connection 1, 2, 3	G $\frac{1}{4}$	G $\frac{1}{2}$
Regulator function	Output pressure constant, with primary pressure compensation, with return flow, with secondary venting	
Type of mounting	Via accessories	
Mounting position	Vertical $\pm 5^\circ$	
Grade of filtration [ $\mu\text{m}$ ]	40	
Air purity class at the output	Compressed air according to ISO 8573-1:2010 [7:4:4]	
Bowl guard	Plastic bowl guard	
Condensate drain	Manual rotary	
Actuation security	Rotary knob with detent, can be locked using accessories	
Pressure regulation range [bar]	0.5 ... 7	
	0.5 ... 10	
Pressure indication	Via pressure sensor for displaying output pressure via operational status indicator and electrical output	
	Via pressure gauge for displaying output pressure	

- Note: This product conforms to ISO 1179-1 and to ISO 228-1

Electrical data – On-off valve MS...-EE-10V24P-AD7	
Coil characteristics	24 V DC: 1.8 W; permissible voltage fluctuations $-15\%/+10\%$
Electrical connection	M12x1 to IEC 61076-2-101
Protection class for solenoid coil	IP65
Duty cycle [%]	100

## Service unit combinations MSB4/MSB6, MS series

FESTO

Technical data – Combination 7

Standard nominal flow rate q <sub>N</sub> [l/min]		
Size	MSB4	MSB6
Pressure regulation range 0.5 ... 7 bar		
Grade of filtration	40 µm	4,400
Pressure regulation range 0.5 ... 10 bar		
Grade of filtration	40 µm	4,000

Operating and environmental conditions		
Condensate drain	Manual rotary	
Size	MSB4	MSB6
Operating pressure [bar]	0.8 ... 14	0.8 ... 18
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]	
	Inert gases	
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)	
Ambient temperature [°C]	0 ... +50	
Temperature of medium [°C]	0 ... +50	
Storage temperature [°C]	-10 ... +60	
Corrosion resistance class CRC <sup>1)</sup>	2	
Food-safe <sup>2)</sup>	See supplementary material information	

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

2) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

Weight [g]		
Size	MSB4	MSB6
Service unit combination	1,600	2,000
Mounting bracket	40	76

-  - Note

Materials → Technical data of the individual devices

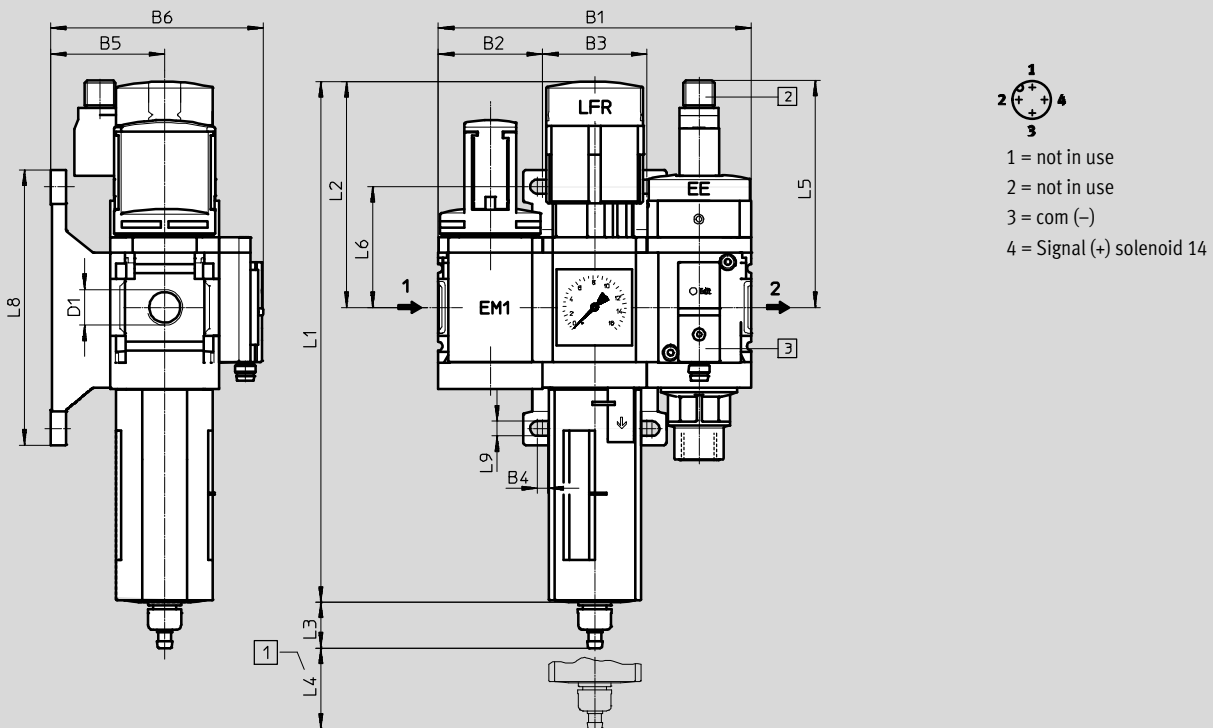
# Service unit combinations MSB4/MSB6, MS series

Technical data – Combination 7

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Manually actuated on-off valve, filter regulator with pressure gauge, solenoid actuated on-off valve with pressure sensor



- 1 Installation dimensions
- 2 Electrical connection to IEC 61076-2-101, plug M12x1, 2-pin for NEBU-M12

- 3 Pressure sensor SDE5-D10-O-...-P-M8 with 3-pin plug M8x1, threshold value comparator, 1 switching output PNP, N/O contact  
→ Internet: sde5

→ Flow direction

Type	B1	B2	B3	B4	B5	B6	D1
MSB4	120.6	40.2	40.2	4	44	82	G $\frac{1}{4}$
MSB6	186	62	62	4.5	54	102	G $\frac{1}{2}$

Type	L1	L2	L3	L4	L5	L6	L8	L9
MSB4	201	87	17.7	25	86.3	46.5	106	5.6
MSB6	285	134.5	15.8	68	104	71	158	6.6

– | – Note: This product conforms to ISO 1179-1 and to ISO 228-1



## Service unit combinations MSB4/MSB6, MS series

FESTO

Technical data – Combination 7

### ★ Core product range

Ordering data					
Size	Connection	Condensate drain	Grade of filtration [µm]	Part No.	Type
Pressure regulation range 0.5 ... 10 bar, pressure gauge with outer scale in bar and inner scale in psi					
MSB4	G <sup>1</sup> / <sub>4</sub>	Manual rotary	40	★ 8025358	MSB4- <sup>1</sup> / <sub>4</sub> :C3:J1:D14-WP
MSB6	G <sup>1</sup> / <sub>2</sub>	Manual rotary	40	★ 8025359	MSB6- <sup>1</sup> / <sub>2</sub> :C3:J1:D14-WP

Ordering data					
Size	Connection	Condensate drain	Grade of filtration [µm]	Part No.	Type
Pressure regulation range 0.5 ... 7 bar, pressure gauge with outer scale in MPa					
MSB4	G <sup>1</sup> / <sub>4</sub>	Manual rotary	40	8042666	MSB4- <sup>1</sup> / <sub>4</sub> :C3:J120:D14-WP
MSB6	G <sup>1</sup> / <sub>2</sub>	Manual rotary	40	8042670	MSB6- <sup>1</sup> / <sub>2</sub> :C3:J120:D14-WP


Festo core product range


- ★ Generally ready for shipping ex works in 24 hours
- ☆ Generally ready for shipping ex works in 5 days


## Service unit combinations MSB, MS series

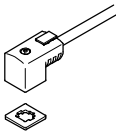
FESTO


Accessories


Ordering data – Silencer U			Technical data → Internet: u	
	Description	Pneumatic connection	Part No.	Type
	for MS4-EM1/EE	G $\frac{1}{4}$	★ 6842	U- $\frac{1}{4}$ -B
	for MS6-EM1/EE	G $\frac{1}{2}$	★ 6844	U- $\frac{1}{2}$ -B

Ordering data – Angled socket PEV					Technical data → Internet: pev	
	Description	Operating voltage range	Electrical connection	Switching status display	Part No.	Type
	for PEV- $\frac{1}{4}$ -...-OD	15 ... 30 V DC	4-pin	Yellow LED	164274	PEV- $\frac{1}{4}$ -WD-LED-24
		≤ 230 V AC	4-pin	Yellow LED	164275	PEV- $\frac{1}{4}$ -WD-LED-230
		≤ 180 V DC				

Ordering data – Plug socket MSSD					Technical data → Internet: mssd	
	Description	Operating voltage range	Electrical connection	Type of mounting cable connection	Part No.	Type
	for PEV- $\frac{1}{4}$ -...-OD	≤ 250 V AC/DC	3-pin	Clamping screws	171157	MSSD-C-4P
	for MS4/6-EE/DE	≤ 250 V AC/DC	3-pin	Clamping screws	★ 151687	MSSD-EB
			4-pin	Insulation displacement technology	192745	MSSD-EB-S-M14

Ordering data – Plug socket with cable KMEB						Technical data → Internet: kmeb	
	Description	Operating voltage range	Electrical connection	Switching status display	Cable length [m]	Part No.	Type
	for MS4/6-EE/DE	24 V DC	2-pin	LED	2.5	547268	KMEB-3-24-2,5-LED
					5	547269	KMEB-3-24-5-LED
					2.5	547270	KMEB-3-24-2,5
			5	547271	KMEB-3-24-5		
			3-pin	LED	2.5	★ 151688	KMEB-1-24-2,5-LED
					5	151689	KMEB-1-24-5-LED
		10			193457	KMEB-1-24-10-LED	
		230 V AC	3-pin	-	2.5	151690	KMEB-1-230AC-2,5
					5	151691	KMEB-1-230AC-5

Ordering data – Illuminating seal MEB-LD				Technical data → Internet: meb	
	Description	Operating voltage range		Part No.	Type
	for plug socket with cable KMEB and plug socket MSSD-EB	12 ... 24 V DC		151717	MEB-LD-12-24DC
		230 V DC/AC ±10%		151718	MEB-LD-230AC

Ordering data – Padlock LRVS-D			
	Description	Weight [g]	Part No. Type
	for filter or pressure regulators	120	193786 LRVS-D

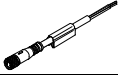

Festo core product range

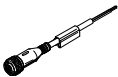

- ★ Ready for dispatch from the Festo factory in 24 hours
- ☆ Ready for dispatch in 5 days maximum from stock

## Service unit combinations MSB, MS series

FESTO

Accessories

Ordering data – Connecting cable NEBU-M8				Technical data → Internet: nebu	
	Electrical connection	Number of wires	Cable length [m]	Part No.	Type
	M8x1, straight socket	3	2.5	★ 541333	NEBU-M8G3-K-2.5-LE3
			5	★ 541334	NEBU-M8G3-K-5-LE3
	M8x1, angled socket	3	2.5	★ 541338	NEBU-M8W3-K-2.5-LE3
			5	★ 541341	NEBU-M8W3-K-5-LE3

Ordering data – Connecting cable NEBU-M12				Technical data → Internet: nebu	
	Electrical connection	Number of wires	Cable length [m]	Part No.	Type
	M12x1, straight socket	4	2.5	★ 550326	NEBU-M12G5-K-2.5-LE4
			5	★ 541328	NEBU-M12G5-K-5-LE4
	M12x1, angled socket	4	2.5	550325	NEBU-M12W5-K-2.5-LE4
			5	541329	NEBU-M12W5-K-5-LE4

Festo core product range

- ★ Ready for dispatch from the Festo factory in 24 hours
- ☆ Ready for dispatch in 5 days maximum from stock

# Festo - Your Partner in Automation



**1 Festo Inc.**  
5300 Explorer Drive  
Mississauga, ON L4W 5G4  
Canada

**Festo Customer Interaction Center**  
Tel: 1 877 463 3786  
Fax: 1 877 393 3786  
Email: [customer.service.ca@festo.com](mailto:customer.service.ca@festo.com)

**2 Festo Pneumatic**  
Av. Ceylán 3,  
Col. Tequesquináhuac  
54020 Tlalneantla,  
Estado de México

**Multinational Contact Center**  
01 800 337 8669  
[ventas.mexico@festo.com](mailto:ventas.mexico@festo.com)

**3 Festo Corporation**  
1377 Motor Parkway  
Suite 310  
Islandia, NY 11749

**Festo Customer Interaction Center**  
1 800 993 3786  
1 800 963 3786  
[customer.service.us@festo.com](mailto:customer.service.us@festo.com)

**4 Regional Service Center**  
7777 Columbia Road  
Mason, OH 45040

Connect with us



[www.festo.com/socialmedia](http://www.festo.com/socialmedia)



[www.festo.com](http://www.festo.com)

Subject to change